BREAD BOX

THE VIDEO TOASTER™ DESKTOP VIDEO MAGAZINE

Feb/Mar 1992- Issue #4
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Interview: Kiki Stockhammer

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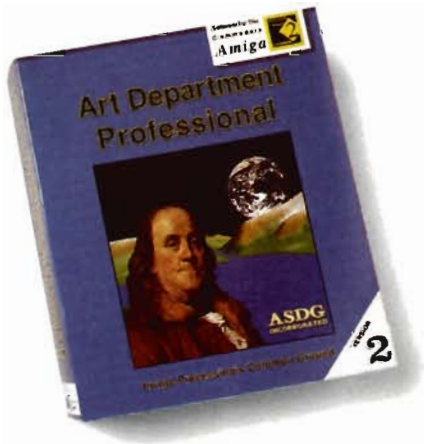

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BREAD BOX

THE VIDEO TOASTER DESKTOP VIDEO MAGAZINE

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This month's BREAD BOX cover image was created with the Video Toaster using Modeler and LightWave 3D (2.0 versions) by LightWave creator, Allen Hastings. The image was converted to TIFF format using Art Department Professional 2.0 and the Professional Conversion Pack. The TIFF image was transferred from the Amiga to the Macinstosh via modem and imported into Adobe's Photoshop 2.0 where it was resized and inserted into the existing Photoshop-created background. The BREAD BOX title and other text was created with Adobe Illustrator and the combined Photoshop/Illustrator image was imported into Quark Xpress 3.0 for electronic color separation.

TOASTER TALK

© 1992 by Jim Plant

Lee and Kathy Stranahan did the Video Toaster community a great and much needed service when they started publishing the BREAD BOX newsletter back in early 1991. They created the first (as far as I know) All-Toaster publication ever, as well as the first All-Toaster User's Group (L.A.-based Upper Crust), and probably the first All-Toaster BBS. Lee was one of the first people outside of Topeka to "get it". (NewTek defines "getting it" as: overwhelmingly understanding and appreciating the potential impact of the Toaster to the point that it changes your life). Lee "got it" so well that now he and Kathy are packing the wagon and moving from L.A. to Topeka, and if that's not "changing your life", I don't know what is.

Lee has been offered and has accepted a position with NewTek. (It is a position that has not yet been completely defined, but this is completely consistent with NewTek's style. They look for superior people with superior attitudes and then create unique positions for them.) By taking this job, Lee found himself in a peculiar position in regards to BREAD BOX. Working for NewTek, Lee would be privy to much information that might not be appropriate for publication. This potential conflict-of-interest created an obvious dilemna: what becomes of BREAD BOX?

Lee and Kathy's decision was to look for a publisher that they felt would #1) maintain the tradition of BREAD BOX, #2) continue to serve its readers and, #3) strive for constant improvement in both production and editorial values. Like all proud parents, they want their children to reach their full potential. You hold in your hands the first manifestations of their decision.

Beginning with this February/March 1992 issue, AVID Publications will assume the responsibility of publishing BREAD BOX. This includes all editorial, production, subscription, distribution, advertising and promotional activities. We have combined Lee and Kathy's plans for BREAD BOX with our own and we think you are going to like the results.

Current BREAD BOX subscribers will quickly note the immediate differences, but for those of you who are new to BREAD BOX, let me point out some of the changes. First (and most obvious), is the addition of the 4/color cover. Each month we will feature a different Toaster-produced (LightWave or ToasterPaint) image on the front cover. The second most obvious change is the expanded editorial coverage. When BREAD BOX first started, it was published as an 8-page newsletter. As time progressed, it grew to a 20-page newsletter. The "new and improved" BREAD BOX starts out at 44 pages (including the cover). The editorial content will continue to increase as the interest in the Video Toaster rises.

Interest in the Toaster is one thing that NewTek doesn't have to worry about. This is a HOT product! I have had the opportunity to closely follow the Toaster's development over the past 4 years and I have watched it grow from a "tongue-in-cheek" mention in an Amiga magazine to a product that is revolutionizing an industry. In one staggering leap, the Video Toaster has brought the potential for sophisticated, broadcast-quality television and video communication to the masses.

It has often been said that "the power of the press belongs to those who own one." The same could be said for the even greater power of television and video. No one can deny the power and effectiveness of communicating in this medium. But, what HAS been denied is access to the means of producing it. NewTek is committed to changing that and the Video Toaster is just the beginning of a family of products that will completely crumble the brick wall in which the Toaster has already knocked a gaping hole.

1992 will be the year that NewTek begins to show us a few more of the Toaster-peripheral cards that they have, so far, played pretty close to the vest. Perceptive BREAD BOX readers will have already noted Tim Jenison's and Paul Montgomery's surprisingly candid remarks in their BREAD BOX #2 interview. Their mention of editing and sound-related products were a tantalizing hint of what will become increasing clear in 1992.

Naturally, BREAD BOX will focus on NewTek's activities. But, there are also a few other companies that have "gotten it" and begun addressing the Toaster market. One company that I am particularly impressed with is Digital Processing Systems (DPS). This Canadian company has had a lot of experience in the broadcast signal processing field and, over the past year, they have focused much of their resources on the desktop video market, particularly the Video Toaster. Their Personal TBC was the first time-base-corrector-on-card for use with the Toaster, and its "under $1000" price tag was almost as big a price break-through as the Toaster itself. Not content to rest on its laurels, DPS quickly followed with the Personal TBC II, with software-controlled Proc Amp functions, color balancing and other signal processing improvements.

Recently, I received a preliminary press release on yet another innovative and cost-busting product from DPS: The Personal V-Scope. The Personal V-Scope is a combination Waveform Monitor and Vectorscope on a card that fits into the PC slots of the Amiga or NewTek Video Workstation. It was "designed specifically for the Video Toaster market to provide users with quantitative information on the quality of their video images." Here are some of the highlights as gleaned from the release:

Display Modes
1. Full screen waveform monitor
2. Full screen vectorscope
3. Full screen vectorscope overlaid with waveform monitor
4. Split screen side-by-side waveform and vector displays on bottom of screen with video visible on top
5. Superimpose the selected display over the input video

Note: The Personal V-Scope features a dedicated output for full-time waveform/vector display on a user-supplied standard composite monitor.

Operational Modes
1. 1 or 2 horizontal line waveform display
2. Low pass filter for viewing luminance only
3. Peak hold for retaining display of highest video levels
4. Freeze to stop and display a still waveform or vector image
5. Variable display update rate from 30 frames/second to 1 frame/5 seconds.

The V-Scope package comes with over 30 diagnostic test patterns which can be loaded and displayed via the Toaster framestore function. And, for those who need further illumination on the function and operation of vectorscope and waveform monitors, DPS also includes a comprehensive instruction/information manual. The suggested list price of the DPS Personal V-Scope is $995. Call (416) 754-8090 for more information.

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What the Critics are Saying

"...just the ticket for Toaster 2.0 users...I can attest to their craftsmanship and usability."
- Dr. Mortier, Avid 1/92

"...the fonts look great when rendered."
- Mr. Dubreman, Avid 1/92

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It doesn't take much imagination to envision an entry level NewTek Video Workstation with a couple of internal TBCs, a signal testing card, an A/B Roll editing card, and a compatible audio card with sound processing and audio-follows-video capabilities. One complete, compact box with everything you need (except cameras and VTRs, of course) for around $10,000. In fact, with existing 3rd-party products it is almost possible to put this system together right now (I'm not sure about the audio-follows-video). Check out the TBC's from DPS or Digital Creations (and others), the high-quality sound cards from Sunrize Industries, the industrial edit controllers from RGB Computers and Video, and Interactive Microsystems. I'm not talking about years down the road, I'm talking about months!

Once you've got your hardware lined up, you've got even more choices for Toaster compatible software. The Toaster has given birth to a cottage industry of fonts, textures, backgrounds, and 3D objects that is growing exponentially. I'm already starting to see the kind of product specialization that is usually the province of much older markets. One example of this comes from Mach Universe (714-563-9542). They've spent dozens of hours meticulously creating a detailed model of a large truck and trailer. This "Big Rig" model can be customized in LightWave 3D to be used by any production company that has transportation, or trucking clients. Would you pay $50 for something that might take a week or more to do yourself? I certainly would. With the "Big Rig" model, all you have to do is map your client's logo onto the cab and trailer and you knock their socks off. HINT:It might not be a bad idea to go out and get yourself a SyQuest removeable media system to store the huge library of custom objects, fonts and textures you're bound to collect.

With so much happening on the NewTek and the 3rd-party hardware and software fronts, we are going to have our hands full keeping you informed and educated on all aspects of the Video Toaster revolution. Stay tuned to BREAD BOX, and enjoy!

Jim Plant
Editor & Publisher

THANK YOU

The first thing that you probably noticed about this month's issue was the great looking cover and the new graphic look of Bread Box. I wish I could take credit for it - but I can't.

Beginning with this issue, I'm no longer editor or publisher of BreadBox. I've taken a position with NewTek. In fact, Kathy and I will probably be about ready to head out to Topeka by the time you read this.

Jim Plant, who has edited and published AVID, has taken over the reins. After you read this issue, I think you'll agree it's in very good hands.It's hard, however, to actually admit that the darn thing looks better without me. And from what I've heard of Jim's plans, it's just going to keep getting better. I can't wait to see the changes, but...

Well, I guess it's a little like putting a child up for adoption and seeing it become president or something. You can't really take the credit, but you feel like you're part of it somehow.

Kathy and I will continue to be part of Bread Box - we'll be doing some writing and helping out in the business transition -but it's not our baby anymore.

Before we turn the keys over, though, we'd both like to express how much we've appreciated your patience and kind words. It's meant more to us than we can say.

Thank you...and take it away, Jim.-

Kathy and Lee Stranahan

MACWORLD REPORT

© 1992 by Lee Stranahan

Sure, NewTek's booth at MacWorldExpo in San Fransisco this January had a lot going for it - celebrities hanging around, a brand new version of the Macintosh interface for the Toaster, and of course, Kiki Stockhammer. But the biggest thing the booth had was the CROWDS. If you've seen NewTek at conventions before, you know that the Toaster attracts a crowd - but this MacWorldExpo was big.

How big?

So big that show officials were prepared to shut down NewTek's booth because of the size of the crowds.

Seriously.

Shutting down the booth wasn't the first move by MacWorldExpo officials, though. They said the NewTek crowds were blocking the aisles and overflowing into other vendor's booths. This was true. Their first idea was to require NewTek to hire security guards to move the crowds in. The guards moved the crowds in, but more crowds filled in the space they left, creating twice as many people in the same space. And the aisles were still blocked. Not exactly the result they'd hoped for.

Finally, they got so frustrated they were ready to shut the booth down, but instead decided to give NewTek one more chance. This involved turning the entire booth around. No, not at the end of the day, they wanted it done at high noon, right in the middle of the show!

If you've never assembled the NewTek booth, it should be pointed out that 1) it's big and, 2) it's heavy. There are lots of wires and cables, too. It usually takes a day and a half to set it up.

In this case the unusually motivated NewTek show crew was able to break down the booth, turn it around, and set it back up in 53 minutes. A new world's record. O.K., Enough bragging - let's talk about why the crowds were there.

The Mac Toaster

NewTek was showing the Macintosh interface for the Video Toaster, in a nearly completed state. The interface, which should be shipping this spring, features a SCSI hardware connection from any color Mac to one of the slots on the Toaster System. This super-fast SCSI connection allows file transfers at the rate of up to a Megabyte per second. The interface gives Mac users control over the Toaster's switcher, including the ability to load CG pages and framestores.

Shown for the first time was the abilty to save framestores to the Mac as PICT images, or to load PICTs as framestores - automatically. This means you can take a LightWave image, for instance, and bring it into Adobe Photoshop for image processing, in less than 30 seconds. (Most of the time is in conversion - the actual transfer is QUICK.)

Toaster System 2.0 also allows LightWave users to load Swivel 3D, AutoCad DXF, and Sculpt 3D/4D objects automatically; and the Mac interface allows those files to be transfered easily from the Mac to the Toaster.

Mac users were very excited by the prospect of integrating the Video Toaster into their work. At $4695, the Mac-Toaster System is priced less than some software-only 3D packages on the Mac, and there is no way to get the video quality of the Toaster on the Mac for anything close to the Toaster's price. The Mac interface alone is expected to sell for under $500.

Toaststyles of the Rich and Famous

The San Fransisco Bay Area is home to Toaster guru/all-around talented guy Todd Rundgren, so it's not a huge surprise that he showed up at the NewTek booth. (Rundgren and partner David Levine worked on the Mac interface, as well.) Todd also played a couple of songs at Verbum Magazine's Human Be-in party, including one with a title we can't print. (We'll put it this way - Todd isn't a real big Jesse Helms fan.) The Be-in also used about six Toasters, as well as other video gear, to produce post-pychodelic/pre-virtual reality screen projections.

Kiki and Mark Randall also appeared on long-time Bay Area DJ, Alex Bennett's, morning radio show. Alex is a huge fan (and power user) of the Toaster, and had a lot of fun with Kiki and Mark. Alex also came by the booth and demo'ed the Toaster to convention attendees for a while.

Ubiquitous computer writer John Dvorak is also a Toaster user, and he also had Kiki and Mark on his Radio show. When NewTek honchos Tim Jenison and Paul Montgomery made a rare convention appearance, they gave John a personal demo of the Toaster's new features. Needless to say, he was impressed. I wouldn't be surprised to see the Toaster pop up in some future Dvorak articles.

Final Thoughts

There is a huge pool of creative talent among Macintosh computer users. The ability to import the tremendous amount of Mac art into the Toaster environment (and visa versa) had many MacWorld attendees extremely anxious to get their hands on a Video Toaster. I, for one, can't wait to see the results of this marriage of technologies.

TOASTER SYSTEM 2.0

© 1992 by John F. Gross

Toaster System 2.0 is finally here and it was well worth the wait! I had the privilege of being a beta tester for NewTek for System 2.0, and I can tell you that it is MAJOR improvement over System 1.0. There have been enhancements to every part of the Toaster and in this article I'm going to discuss many of them, and show you how you can benefit from the usage of Toaster System2.0 on your own system.

Before I start talking about System 2.0, I want to quickly address WorkBench 2,0. Many people have been waiting for System 2.0 before upgrading to WorkBench 2.0. While System 2.0 will work with either WorkBench 1.3 or 2.0, I would strongly recommend upgrading to WorkBench 2.0 when you get a chance. WorkBench 2.0 makes file handling much easier. If you have problems using the shell or the CLI to rename, move and delete files, WorkBench 2.0 is the answer for you. You no longer need to access the shell to manipulate files. It is now possible to do it all by pointing and clicking. File access time has also been speeded up. Now enough about that, it's time to get on to the good stuff . . .

One of the things you need to be aware of with System 2.0 is the sheer size of it. System 2.0 takes up approximately 30 megs of storage space on your hard drive! This is the largest program for any personal computer. You need to have 40 megs of free space to install the software, so I would recommend backing up your drive if you don't have the room. Perhaps it's time to consider making that second drive purchase?

The first thing you see when your Toaster is started up is the switcher interface, so that's as good a place as any to start. The obvious change to the switcher is the addition of two new effect banks - E and F. This doesn't mean, however, that there are only 64 new effects. At last count there were 95 new effects (The 'Traz effects wizards may have come up with even more at the last minute). This is a 76% increase in the number of effects from 1.0! Since there are only 64 new spaces (62 if you account for the smooth fade effect on each bank), new effects have been interspersed throughout all of the effect grids replacing some of the old effects. Don't worry - if there is a certain effect you just have to use from System 1.0, you can still access it from the System 1.0 default project that includes all of the old effects in their original positions.

The new 2.0 effects aren't just your standard run of the mill transitions. There are some new types of effects that have never been seen on any system ever. NewTek has provided incredible organic wipes such as pouring and dripping video, smoke wisps, clouds, page tear and turn, and spray painting between two sources.

The new 'silhouette' effects are wild! These include numerous sports transitions where you see the silhouette of a pitcher, golfer or a quarterback (among others) move across the screen making the transition from one video source to another. Also in the 'silhouette' category are the KikiFX. These include a silhouette of NewTek's Kiki Stockhammer making the transition from one video source to another in a variety of sexy moves.

Warping effects are another new class of transitions. They take live video (or still-stores) and wrap it onto spheres or cubes in real time and then move it off the screen in a variety of clever ways.

Positionable effects are another great feature that NewTek has given us in 2.0. There are four types of positionable effects - two compression zooms, both in and out, and two wipes, again, both in and out. What exactly does positionable mean? It means that you can tell the Toaster where your zoom or wipe comes from (or goes to) when you execute the effect. These are straight line paths that can be set up and then saved with the project so you are able to customize your own transitions. If four customized effects aren't enough for you, NewTek has provided a project that contains two grids of nothing but positionable effects that can be custom tailored for your specific applications. This allows you to customize 16 zoom-ins, 16 wipe-outs, etc. that can all be saved for future use.

One of the last visible changes to the effects banks are four customizable chroma effects. You have the ability to take any four of the 100 definable chroma effects and assign them to four chroma effect icons on the switcher. This allows you to access any type of chroma effect quickly without having to enter ChromaFX. You can fade between your original image and your 'effected' image, or use any of the organic effects to drip, or pour, or 'blow in' your colored video. You can also apply a chroma effect to a still image! One of my favorite new effects is the 'Old Film' effect. When you apply this to your video source (live or still) you get the appearance of scratchy old film running by. The neat thing about this effect is that it stays running until you click the mouse button to stop it. You can even apply a sepia tone chroma effect and the old film effect at the same time, giving a really aged look to your video! Those of you who have avoided using ChromaFX because you felt it was too confusing or hard to use, will find that color-tweaking your video productions is now fast and easy.

There are many changes to the switcher that are transparent. One of my favorites is the ability to execute an effect by clicking on the crouton after the effect has been loaded. In other words, click on an effect crouton to load the effect, then click on it a second time to execute it. Some effects that are small in file size, such as wipes and many of the TDEs, will execute right away

if you rapidly double-click on the effect crouton. Once you start clicking on the croutons to execute effects, you will soon find that you hardly ever use the auto button. It is so much easier this way.

One of the other great new time-saving features of the switcher is the ability to unload a program slice by holding down the shift key and clicking on the program icon. No longer do you have to enter a slice just so you can unload it from memory. As a matter of fact, the only way to now quit LightWave is to shift-click it out of memory.

Many people have asked for the ability to fade effects in and out. NewTek has responded by creating a novel feature in the Toaster that allows you to do just that. If you manually execute an effect part-way so the mid-transition indicator is blinking, then click on the smooth fade crouton, you will notice that the effect you had selected now has a blinking transition indicator attached to it. You may now execute the smooth fade by dragging the T-bar down, hitting the auto button or space bar, or (my favorite) clicking on the smooth fade again. Your effect-in transition will now fade out. Drag the T-bar back up (or do an auto) and your effect will fade back in. This is a great way to fade in over-the-shoulder graphics or fade out half of a wipe. This splendid new feature also allows you to fade out while keying images!

Speaking of keying, the luminance keyer has been 'cleaned up' if you are keying a live source over another source. No longer do you have such a noticeable white or black edge along the right hand side of your live image. All those nice weather maps you've been waiting to key yourself over can now be put to good use.

Well, if I keep talking about the switcher, I'm going to run out of room before I get to any of the other programs. So, let's take them one by one . . .

ChromaFX is easier to use. The screen looks pretty much the same except for the addition of four 'preset' effect icons and four source buttons that let you change your video sources by clicking on the appropriate button. There are now 54 preset effects, any of which can be changed, and blank spaces to add 46 more of your own. Cycle mode has been fully implemented. This allows you to set up a chroma effect and cycle the colors up, down, or up and down simultaneously.

Any chroma effect, including cycles, can be assigned to any of the four preset effect icons. Once you return to the switcher, clicking on a chroma effect icon will load and execute the corresponding preset effect. Saving a project will save the preset chroma effects. This means you may have a multitude of projects each having different preset effects.

With the addition of these new features, I have a feeling that ChromaFX will be used more often. I have found ChromaFX to be extremely useful in creating the, previously mentioned, old-time film look and changing contrast and brightness levels of poorly shot video. I think you'll be able to find some beneficial uses for it.

ToasterPaint features a brand new scrolling method which is much easier to use. If you've been frustrated by touching the edge of your image and having your screen scroll quickly away from your painting area, you now have something to be happy about. If you go to an edge to scroll the paint screen, you now have to keep moving the mouse to scroll the screen. When you stop moving to the mouse, your canvas stops scrolling. This is very much the way it would be if you were grabbing the screen by hand and moving it over. If you are painting and you hit the edge, the screen will scroll slightly as you keep painting. I have found this new method to be very intuitive.

A superb new feature in TPaint is the ability to grab images directly from either frame buffer. There is a new menu choice that lets you grab either 1, 2 or 4 fields from DV1 or DV2. ToasterPaint will automatically remove any motion from a frozen image before it loads it. The best part of this new feature is that you do not need to save the framestore image from the switcher before you load it into ToasterPaint. The only thing you need to do now is freeze your image, enter Paint and grab the image out of the buffer. This means that you no longer have to take up valuable framestore space by saving an image that will only be used in order to cut out a brush.

For those of you that want to or need to use Macintosh PICT files, ToasterPaint will now accept this format. It's going to be much easier to import your existing Mac art work into the Toaster.

The paint 'canvas' is now 752 pixels wide as opposed to the old 736 wide in 1.0. The wider canvas means that the Toaster is saving a wider video image. This means that there is no more 'zipper' effect on the right hand side of still images.

One final feature of ToasterPaint 2.0 is that framestores saved from within ToasterPaint are saved in a 'compressed' format. The fewer the number of colors in the image, the smaller the file size. I loaded the Video Toaster logo framestore into Paint and saved it as a framestore. The original logo size was approximately 722K. After saving it through Paint, the file size was 664K. An all black screen saved as a framestore came out to 15K!

ToasterCG has some excellent new features added. First of all, CG text rendering has been speeded up to about twice as fast as before. There are now approximately 35 font styles with most fonts having 4 or 5 sizes each for a total of about 130 fonts! Twelve of these new font styles are chroma fonts.

There now exists the wonderful ability to import images from ToasterPaint into the CG and lay text over the top. With 1.0, in order to use Toaster CG fonts in ToasterPaint, you had to save a CG framestore page with your text typed out as a framestore, load it into Paint and cut the text out as a brush. Things are much simpler now. All you have to do is load your image into ToasterPaint, return to the switcher leaving paint in memory, and enter CG. Once in CG, select a framestore page and press Alt-F3 to change your background colors. There is a new icon that looks like ToasterPaint's slice. By choosing this and hitting return, you are instructing CG to use the image that is loaded into ToasterPaint's buffer as your background for your framestore page. After typing your text and hitting F9 to render your image, you will see your text laid on top of your ToasterPaint image. If you need to move your text around, you can do so and re-render the image. If you choose solid or transparent shadows for your fonts, you will see them on your image. This feature is so terrific, you'll wonder how you got along without it.

Buffered pages are another new feature in CG. A buffered page is either a framestore or a key page that is saved into a special directory right from the CG. A buffered page will load from the switcher

in the same amount of time needed to load a normal framestore. You no longer need to wait for CG pages to render out when you load them from the switcher. Buffered CG pages, like framestores saved from ToasterPaint, are saved in a compressed format so disk space is optimized.

If you've wanted to use your favorite word processor to type out credits or text pages, you now have the capability of doing so. The new CG will allow you to import an ASCII text file into any type of CG page. This allows for easy text editing and spell checking before bringing your text into CG.

You can now use shadows and borders in scroll and crawl pages. You are still restricted to a single font color in scroll pages however.

There are two changes having to do with selecting fonts that I really like and don't think I could get along without. If you choose Alt-F2 to select new fonts, you can now hold down the shift key and use the up/down arrows to advance through your fonts ten at a time. This really increases font selection speed. I have approximately 400 Toaster fonts. It used to take about forty seconds to go from the top of the list to the bottom; it now takes about five. The second feature lets you move backwards through your available font selections as you are choosing them by pressing F2 and the control key at the same time. I can't count the number of times I have passed the font I wanted to use and had to cycle through all the rest of my loaded fonts just to pass it again. Now I can move right back to the one I want. Very nice.

LightWave 3D, sporting a new high-res interface, has the most changes of any of the Toaster programs. If you are a LightWave fanatic like me, you'll love all the new features found in LightWave 2.0. Of course, the big change you've heard about is ray tracing. Reflecting objects in other objects is now as easy as giving your objects a reflective value and pressing the 'Render Reflections' button. You can choose to render reflections, shadows and/or refractions. Refractions will allow you to model things like realistic glass and water. Imagine a stick in a glass of water. Choosing to render refractions will cause the stick to appear bent when looking at it from outside the glass. You can set the index of refraction for realistic renderings. If you've had a tough time trying to get nice looking reflections by using reflection maps, LightWave 2.0 is for you. Reflection/refraction tracing is very easy to use. I rendered a scene with two 'mirrors' facing each other with a reflective object in between them. The multiple reflections going back and forth were extremely realistic.

In the Objects menu there is now a 'Save All Objects' button (Thank You Allen!). This does exactly what you think it does. All the objects in your scene are automatically saved using the same file names. You also have the ability to have multiple morph targets. One object can morph into another into another, etc. You are not able to morph surfaces yet, but you can achieve similar effects by dissolving objects. Speaking of dissolving, you can now save envelopes and reload them at a later time to be used on other objects.

Do you use other 3-D programs? If so, you can now import AutoCad DXF, Swivel 3D, Sculpt 3D/4D, 3D Studio and Wavefront objects directly into LightWave.

One of the major changes in the Surfaces menu is the ability to save and load surfaces! If you come up with a nice surface, you can save it and load it at a later time onto a surface of your choice. If the surface you saved uses an image map, the image will be loaded and wrapped onto the new surface. You may have to resize the texture to fit the new object however. This brings us to one of the best new features in LightWave: Automatic Texture Sizing! Ever have a tough time getting an image to wrap onto a surface correctly? With auto sizing, correct image placement is as easy as loading your image and clicking the Automatic Sizing button. LightWave does the rest. This is really a powerful new tool.

A feature found in some high-end systems is image map anti-aliasing. LightWave supports this feature giving you smooth, clear image maps. If you ever have objects that have flipped polygons giving 'holes' in your object, you can use the Double Sided button to give two sides to every polygon, thus saving you the time needed to go into Modeler to fix it. Bump Mapping is also available with spherical or cylindrical mapping and you can define the amplitude or height of the bump.

Framestores can now be loaded as images into LightWave. With 1.0, a framestore had to first be loaded into ToasterPaint and saved as an RGB before it could be used in LightWave as an image map. You can now save a lot of time by loading framestores directly.

There are two new rendering modes: Super Lo Res and Print Resolution. Super Lo Res is 160 X 100 (188 X 120 in overscan). This is designed for quick and dirty rendering to check things out quickly. Print Resolution is 2560 X 1600 (3008 X 1920 in overscan). This resolution, of course, is not intended for video, but for high quality print output. In the backdrop menu, there now exists the ability to key out a definable range of colors in a foreground image rather than just black.

The Layout screen looks pretty much the same. Don't let that fool you though. There are now keyboard commands for just about all of the Layout functions. I had wanted this for a long time and find that it's a great time saver. The other thing you'll notice in Layout is the addition of spline controls for key frames. These give you the ability to use ease in and out or acceleration/deceleration between key frames for very realistic motions.

Finally, LightWave's requesters have been greatly improved. There is now a parent button to easily travel back through directories and when you save objects, scenes, etc., the current file name defaults into the requester.

MODELER has also gained a number of new tools. New modify tools include shear, twist, two types of tapers, bend and a magnet tool. All of these tools let you modify an object in interesting ways. They are very intuitive. Among the new multiply tools is the skin command. Skin allows you to create a number of cross sections of an object and then 'skin' across the gaps and connect them together. Imagine trying to model a realistic human finger. With the skin command, it becomes relatively easy to do.

You can now add points to existing polygons. This was always a time consuming task in the past, but is now so simple that even my grandmother could do it. Removing points from existing polygons is just as easy. In 1.0 Modeler, if you wanted to modify polygons, you had to select all the points that composed those polygons and then modify those points.

Now you can select the polygons you wish to affect and move, rotate, scale, stretch or modify them directly. It was often difficult to select all the points of individual polygons in complicated objects, but now you don't need to. Selecting points and polygons couldn't be much easier. You can now select points or polygons from the 3-D perspective view. Select a point, turn the object around, select another few points and then turn it again and select more.

Modeler 2.0 also lets you split polygons into multiple polygons. This is useful if you need to have detail in certain areas of your object. If you have one single polygon composed of 200 points, for instance, you can't bend it to form a curved surface. If you split that same polygon into many polygons, you can now bend them to give a nice smooth curvature. On the flip side, you can merge many coplanar polygons into a single polygon. Doing so will speed up rendering times—the fewer the polygons, the faster the render.

Another very useful new tool lets you select non-planar polygons in an object. Non-planar polygons are polygons whose points are not all in the same plane. These polygons do not always render properly. After selecting all the non planar polygons, you can choose the Triple function and all of those polygons will be divided up into multiple 3-sided polygons. Any three sided polygon, by definition, has all of its points in the same plane (now you know why tripods have three legs—three points define a plane).

Whew! That's a ton o' features for your money, and I certainly haven't covered everything. One of the best new features of the Toaster won't be found inside the computer. It will be found within the pages of the new and improved Toaster manual. NewTek's James Hebert, with help from Lee Stranahan, did a bang up job of re-writing the manual from start to finish. I had a chance to see a rough copy of the new manual and I was very impressed. While not as thick as the old one, it contains much more useful information and great tutorials written by Lee covering every aspect of the Toaster. Kudos to James, Lee and crew for the fine work on the new manual.

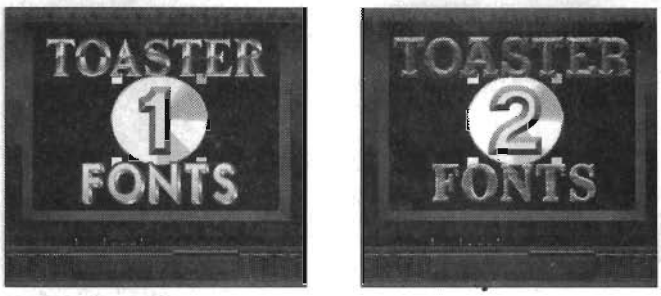
Another nice addition to the Toaster is a directory full of ARexx example programs written by NewTek's Arnie Cachelin that use the Toaster in a variety of clever ways. There are scripts included to shrink images, make storyboards out of LightWave frames, and run a Toaster slide show, among others. You can use these programs as is, or modify them to fit your needs. One final add-on is software control for the Toaster's genlock. After exiting the Toaster, you can now start up a small program that will allow you to fade or cut between the Toaster's sources and fade in and out your computer RGB graphics. This is certainly a welcome addition for those who occasionally use the Toaster as a genlock for other graphics.

As you can see there has been a lot of work that has gone into this major upgrade. I'm amazed that NewTek was able to accomplish all of this in a year. I've had software programs that have been out for years before being upgraded (if ever), so it's reassuring to see a company that is committed to improving their products. If you haven't already done so, upgrade your Toaster System software as soon as you can. You'll feel like you have a brand new Toaster (and you will)!!!

KARA FONTS

TOASTER FONTS!

NEW Broadcast Quality ChromaFonts



Kara Fonts presents two packages of new, anti-aliased, 16 million color Chromafonts for NewTek's **VIDEO TOASTER CG***. These fonts will give **TOASTER** users the professional broadcast quality look with a wide variety of dimensional looking type styles and texture treatments. Each package contains four different styles in two sizes each (average 64 & 76 pts.). All fonts include a full character set of Caps, **Lower Case**, numerals and special characters (and ®, ©, £, ¢,°). Hard Drive Installation utility included.

TOASTER FONTS 1: Six Disk Set - Sug. Retail $ 99.95
TOASTER FONTS 2: Six Disk Set - Sug. Retail $ 99.95

*Video Toaster CG is a Registered Trademark of NewTek Inc.
TOASTER FONTS 1 requires 6.5 megs of Hard Drive storage. TOASTER FONTS 2 requires 6.1 megs of Hard Drive storage.

KARA COMPUTER GRAPHICS
2554 Lincoln Blvd., Suite 1010, Marina Del Rey, CA 90291 (310) 578-9177

INTERVIEW

Kiki Stockhammer

You've seen her at trade shows, captivating and charming the crowds with her wit, her good looks and her skill with the Video Toaster. Her high-energy, seemingly non-stop act has won her the well-deserved label of "Queen of the Demos" around the video exhibition circuit. This is a woman who is constantly on-the-go, flying from city to city preaching the gospel of NewTek's video revolution. Bread Box's Lee Stranahan got her to slow down long enough answer a few questions.

BREAD BOX: So, how did you end up working at NewTek?

KIKI: I heard that NewTek was looking for someone who spoke German; they were getting ready to go to a convention in Cologne. I called them up and the next day I got an interview. I met with Paul Montgomery, talked to a number of key NewTek people for three hours, and then Paul introduced me to Tim Jenison. I remember ending the interview by telling them that I spoke fluent German, that I knew they were leaving for Germany, and that they should hire me.

That night, I received a call from Paul, wanting me to meet the Alcatraz team of software engineers. They all interviewed me over the phone. Steve Kell asked me if I knew anything about farming or Nebraska, as that's where he's from. Steve Hartford asked me what music groups I liked and I said Depeche Mode, which is one of his favorite groups. Then Mark Randall asked me how to spell 'insegrevious'. They had questions about Star Trek - which is it, Star Trek or Star Track? It was pretty much love at first interview.

The next day, Paul called and asked me if my passport was valid because I was leaving for Germany in three days. I quit my job, and spent that whole weekend at NewTek, watching videos and learning about computers. I'd always been interested in computers and video, but had never really had much hands-on experience.

A few days later we went to Germany. After the first day with NewTek in Germany, I knew that this was the company for which I'd been looking all of my life.

My first demo was of me barking out features and specs in German, without knowing what they meant. Tim stood next to me, and we were surrounded by hoards of people asking questions, and I interpreted them for Tim.

BREAD BOX: How did you end up becoming NewTek's primary Toaster demonstrator?

KIKI: Since I kept asking all of these technical questions . . . I went into Tech Support for DigiView and DigiPaint. I was there quite a while.

As the Toaster continued to develop, it was getting close to an NAB (National Association of Broadcasters) show. This was about two years ago in Atlanta. The Toaster was close to shipping at that point, and we wanted to make a big splash at that show.

We had designed my demo stage as it is today and that was both my first time demo'ing the Toaster, and the first time that the Toaster was demo'ed live. All of NewTek's late night work payed off. It was a pretty monumental show.

BREAD BOX: What was the crowd response like?

KIKI: It was great. I was really nervous. NAB is for all of the TV engineer technical types and you have to know what you're talking about. All the preparation that we'd done didn't prepare me for what doing my presentation for eight hours would be like. The programmers were still writing code for the Toaster, and I was hanging out with them every night until early morning, learning all of the different parts of the Toaster. I realized that it was getting closer and closer to the time that I had to demo, but no one had said anything to me about what I should talk about. Because of that, my presentation isn't scripted - it's me, showing people how I use the Toaster. The way that I talk about the Toaster is the way that I've learned to use it - by playing with the software.

BREAD BOX: What's your job function at NewTek, outside of shows?

KIKI: That's a hard question. NewTek really isn't in to specific job titles. I do a lot of shows. On an average, I travel at least once or twice every month. We now have NewTek University, which is the Toaster dealer training program, in which I'm heavily involved. We have approximately one of those per month. I'm also involved in testing all of the new software that's developed by Alcatraz R&D.

BREAD BOX: So, I guess you don't just go to the beach in between gigs...

KIKI: No. I'm usually here late - until midnight or later. NewTek is my family, and I enjoy being around them.

BREAD BOX: From your presentations, it's obvious that you like doing shows.

KIKI: Never in my dreams would I ever have thought that I could have a job wrapped around my personality, and not the other way around. In other words, what I am at NewTek is who I really am. That's what I love about NewTek. Every facet of my work, whether it's being in videos and being in brochures, or learning new technical things that NewTek comes out with, is really me. I like being involved with the

public, as well - talking with people about how we're changing the world.

BREAD BOX: What do you find interesting about the shows that you do?

KIKI: The Toaster has been out for over a year now. What's interesting about the shows is that people say that I've set a new precedent for trade show presentation. Of course, the Toaster deserves most of the credit. It's an incredible product. With it, you can wow and zow people. That's why you can make money so easily with the Toaster. It's like, "Hey! You want to know how to do TV yourself? Here, let me show you." That is incredibly powerful. Every single person in the United States has been influenced by TV at some point in their lives. It doesn't matter who you are. TV is a part of our lifestyle. All over the world, it's the way we communicate. We like to say that video is the new literacy, and the Toaster is the grammar book for video.

BREAD BOX: Have you enjoyed demonstrating the new Toaster System 2.0?

KIKI: 2.0 is really great. It's simplified using the Toaster quite a bit. People are just literally blown away. You look at the people you're demo'ing for, and their mouths are hanging open. People are amazed at how much the Toaster can do with a software upgrade.

BREAD BOX: It seems sometimes as though you demo non-stop...sort of the Terminator of trade show demos. Don't you ever get TIRED?

KIKI: I don't even think about it. The Toaster is a lot of fun to play with. A lot of the ways that I've learned to combine effects is by experimenting live, in front of people. I get a lot of great feedback from the audience - the more interested and eager the audience is, the more it fires me up and I get really excited. I've never seen a person in my life who's looked at a Toaster and found it boring, so I never have a bad time. When people say, "I don't know how you do it," my thought is, "You'd love to have my job, because it's so fun." I don't think of it as a job.

BREAD BOX: So they could stop paying you?

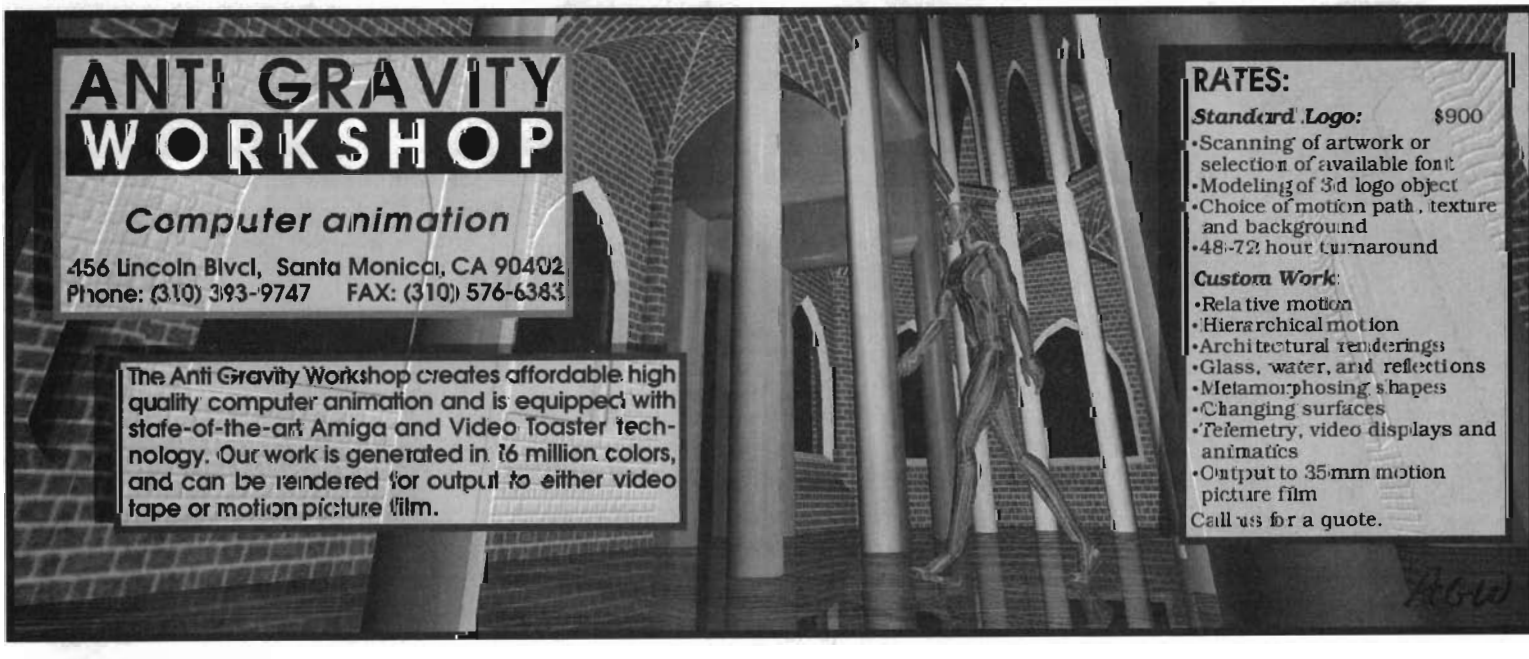
KIKI: (Laughs) No...money and fun go hand-in-hand. But most people are never fortunate enough to have a job that let's them be themselves. I consider it a great luxury, in a sense. I'm happy. I can be crazy, I can be creative. I can also be technical, I can also be...

BREAD BOX: An effect?

KIKI: Yeah...

BREAD BOX: Not many people get to be video effects in their job.

KIKI: Well, that's true. The KikiFX always get a great reaction at shows, but I'm sure some people are going to be bothered by them because they're sexy. But that's okay, because NewTek pursues the cutting edge. I really like that. I have a saying - complacency is death. You're not at your best unless you're always pushing yourself to the edge. I think that's why NewTek has done things that no one thought was possible. We have an eclectic group of people who don't listen to nay-sayers. They think, "Let's try it; let's see what happens." Besides, I am sexy. I like being sexy. I'm also smart and I like being smart. The two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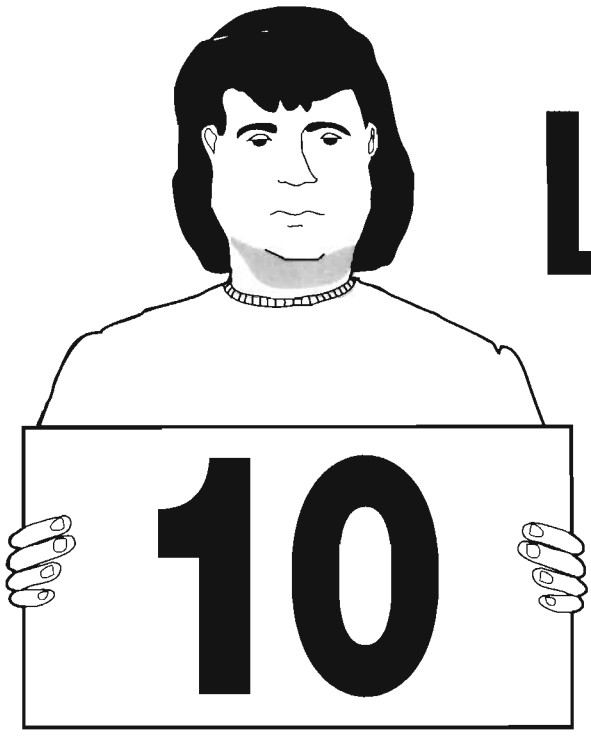

LEE'S PICKS :

Top Ten Toaster Utilities

© 1992 by Lee Stranahan

It's a classic party game - If you were trapped on a desert island, what ten (records, books, you name it) would you want to have with you? For this article I'm picking the ten pieces of software that me and my Toaster would have a hard time living without. You may not be on a desert island, but you may want to look into the software listed below for your studio. I consider them indispensible to the work that I do - hopefully you'll find a few new essential packages here as well. Here are ten of my favorites, in no particular order.

1. First Prize Toasted Fonts

If you use the Toaster's CG very much, you can start to feel as though you can never have enough fonts. Of all the 'regular' (ie non-Colorfont) typeface collections out there, these are my favorite. The fonts themselves are familiar and useful, and most faces come in a large number of sizes. There are six different sets, for a total of 50 different typefaces. One of my favorite things about the Allied fonts is that many of them come in regular, bold, and extra-bold variations, which gives you a great deal of flexibility when putting together your CG pages.

2. Kara's ToasterFonts

Toaster Colorfonts can add life to any CG screen, and the two sets from Kara Fonts are the best ones I've seen. Each set has two sizes of four different fonts, and has nearly complete alphanumerics. Great, professional looking fonts.

3. Pixel 3D 2.0

A must have for any LightWave 3D user, Pixel does four important jobs to help in 3-D object creation: It will import your two dimensional bit maps, utilizing beveling, extruding and spinning functions. It will load and save seven different formats, including LightWave, Imagine, Sculpt 3D, VideoScape 3D, 3D Professional, Turbo Silver and DXF AutoCAD (save only). It will also allow you to view your objects, in wire, solid, shade and color modes, with a real-time rotation interface. Finally, it offers data manipulation and reduction.

The interface has a very LightWave look and feel to it. Everyone I know who uses Pixel is fanatical about it, and I'm no different. If you use LightWave, get Pixel 3D 2.0.

4. Texture City Textures

Some people balk at the idea of buying texture packages. After all, the Toaster has a framegrabber built right in - so if you own a camera, the world is your texture, right? This is true, but it doesn't help very much when you're under a deadline and your client wants to see four different types of marble. And, images grabbed with a nice high resolution three chip camera can look much better than images grabbed from your camcorder. The images in the Texture City collection are the best looking images that I've seen from any of the texture packs out there. The Pro-pack 60 has a nice collection of different textures, including woods, marbles, a variety of metals and a number of great looking 'scenics' like the Santa Monica Pier at Sunset.

5. Art Department Pro 2.0

ADPro 2.0 is a 24-bit image-processing program, and a great utility for anyone

who creates graphics with the Toaster. For starters, it allows you to convert the Toaster's 24-bit NTSC images to a number of other formats, including GIF, TIFF, Postscript and Amiga-displayable IFFs. You can also do a number of 24-bit manipulation functions, such as creating a line art look. ADPro also provides high quality printing capabilities, including output to film recorders or color printers.

One of the most useful new features of the 2.0 version of ADPro are it's JPEG loaders and savers. JPEG is a graphics compression format which allows a great space savings with no apparent loss in image quality. Converting your Toaster graphics to JPEG is a great way to save images for archival purposes, or to send them through by modem.

ADPro also has an ARexx port, which means you can write scripts to perform needed tasks. I use ADPro constantly when working with Toaster images, and its steady stream of timely upgrades always seems to add just the new features I need.

6. VistaPro

I hesitated putting this on the list, because it can be a real waste of time. That's a compliment, though - VistaPro can be so much fun, you'll find you waste a lot of time playing with it. VistaPro is a landscape creation program that allows you to take real-world landscape data and create amazingly realistic looking images. It works in a way similar to LightWave 3D and other 3-D programs - load the object, set up a camera and a target, and the computer will render a picture. The completed picture can then be loaded as a 24-bit graphic into ToasterPaint or LightWave. In fact, using VistaPro-created pictures as backdrops for LightWave images is a favorite use of mine.

VistaPro includes a number of landscapes, including sections of Yosemite National Park and the planet Mars. You can also create new landscapes based on fractal patterns, or modify existing ones by adding features like lakes or rivers. New features in the recently announced upgrade include 3 different kinds of realistic trees (including cactus and sagebrush), roads and buildings, as well as allowing you to use backgrounds and foregrounds. ARexx support is also provided.

An interesting sci-fi side note : Author Arthur C. Clarke is a big fan and avid user of VistaPro. He's even written a book based on his experimentation with the program.

7. PageStream

PageStream is a desktop publishing program, so its inclusion here may seem a little strange. Sure, you can use DTP software to create forms, brochures, and other printed material that your video studio may need...but I have another, more directly Toaster-related, use for PageStream. I use it with Pixel 3D to create 3-D objects for use in LightWave.

Pagestream works with Postscript fonts and other types of outline fonts. Outline fonts have a big advantage over Bitmapped fonts, such as those used in ToasterPaint or ToasterCG - you can resize or stretch them with no loss of quality. This allows a great

Learn Toaster 2.0

Toaster Training tips from Lee Stranahan

Learn to use the Video Toaster the easy way - on video! This set of five tapes by Toaster expert Lee Stranahan will help you make better videos and increase your profits. Lee is the former editor of Bread Box, and author of the tutorials in the new Toaster 2.0 Manual. These tapes ere produced on Betacam and edited to one inch - the quality of the production and the lessons are unlike any other Toaster tapes on the market today.

Tape 1 - Toaster Basics including the Switcher, and hardware hints that save you hundreds of dollars
Tape 2 - CG & ToasterPaint - Dozens of hints and tricks to make better looking titles and graphics
Tape 3 - LightWave Volume One includes tutorials on Modeler, and gives you an introduction to using the Toaster's powerful 3D Program
Tape 4 - LightWave Volume Two takes you further into the world of 3D, including hints on creating realistic surfaces and lighting
Tape 5 - Graphics Tools shows you how to use programs like ADPro and Pixel 3D to make great looking graphics and 3D objects easily

All tapes show you tips and techniques that you won't find anywhere else, and are aimed at the beginning/intermediate level users. Learn practical techniques for Toaster 2.0 the easy way - on video. Each tape has list price of $49.95, or buy all five and save.

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deal of flexibility. PageStream also includes utilities that let you convert IBM or Mac Postscript fonts into a PageStream-readable format.

How does this help you create LightWave objects? PageStream has an option that lets you print a document as an IFF image, instead of printing it to your printer. (IFF is a standard Amiga graphic file format.) This IFF file can then be imported into Pixel 3D and converted into a great looking 3-D object.

I should also point out that, aside from its usefulness for creating 3D objects, PageStream is a GREAT desktop publishing program. The new 2.2 upgrade is powerful, stable, and a great value when compared to other DTP software. With PageStream and a decent printer, you can start producing great looking video cassette labels, ads, and other print materials at home - and become a desktop media mogul.

8. Quarterback & Quarterback Tools

This is a little bit of cheating on my part, because these are two separate programs. But they do work together, and both are essential for keeping your hard drive data protected. Quarterback is a hard drive backup utility. Backing up your hard drive should be a part of your work routine...if it isn't, start performing regular backups NOW. And don't say I didn't warn you. While Quarterback has been around for a while, it's still the best backup program I've used. Its operation is simple and straightforward. Quarterback does what it's supposed to do and does it very well.

Quarterback Tools can be a lifesaver, as well. If you've ever seen the feared message 'Volume DH0: has a read/write error', you know the fear that it can strike in your heart. Quarterback Tools can fix your hard drive, can recover files you may have erased by accident, and will mark damaged portions of your hard drive 'off-limits.'

9. Directory Opus

Keeping your hard drive organized can be a tough job. Putting files where you need them, erasing files that you don't need, renaming and duplicating - these are all tasks for a computer's operating system.

Unfortunately, some seemingly simple operations can be a bear to actually do. That's why many people use a category of programs called directory utilities.

Directory Opus is a directory utility from INOVAtronics, and it makes jobs like copying, deleting, renaming, and duplicating a snap. It's also very easy to customize. On my system, I can move to my Framestore directory (or LightWave Objects or CGFonts or LightWave Images or LightWave Surfaces or....there are a LOT of directories in the Toaster system) - all at the touch of a button.

Of course, there's more to life than simple file maintainence, and Direcory Opus gives you access to a large number of other features. You can launch ARexx scripts from within it, create custom gadgets and menus to automate tasks, and play sound, view pictures, and read or print text files. Directory Opus can also be iconified,

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so it takes up very little memory and can be launched instantly. I use Directory Opus so much that I've set my Toaster System to automatically load it up when I turn it on.

10. AmiDock

If you find yourself using all of the software listed here, your WorkBench screen will probably get a little messy at times - opened drawers and programs all over the place. This shareware program, written by Gary Holland of SoftLogik, will solve that problem.

AmiDock puts a compact strip of icons on your WorkBench screen, and allows you to launch any program with just one click. (This is very similar to a system that the NeXT computer uses.) Use Amidock for a little while and you'll wonder how you ever did without it.

AmiDock is available through computer bulletin boards, including the BreadBoard BBS (Phone #818-883-9778). Your local dealer may also have a collection of Public Domain Disks available (Fred Fish #474) that has AmiDock on it. Gary asks a $15 shareware fee, and the program is well worth it. You also may want to look for 3-D Artist/Bread Box Writer Tim Doherty's collection of icons for AmiDock.

COMPANIES MENTIONED

First Prize Toasted Fonts
Allied Studios
482 Hayes St.
San Francixco, CA 94102
415-863-1781

Kara Fonts
Kara Computer Graphics
2554 Lincoln Blvd., Ste.1010
Marina Del Rey, CA 90291
213-578-9177

Pixel 3D 2.0
Axiom Software
1221 East Center St.
Rochester, MN 55904
507-289-8677

Texture City
3215 Overland Ave. #6167
Los Angeles, CA 90034
310-836-9224

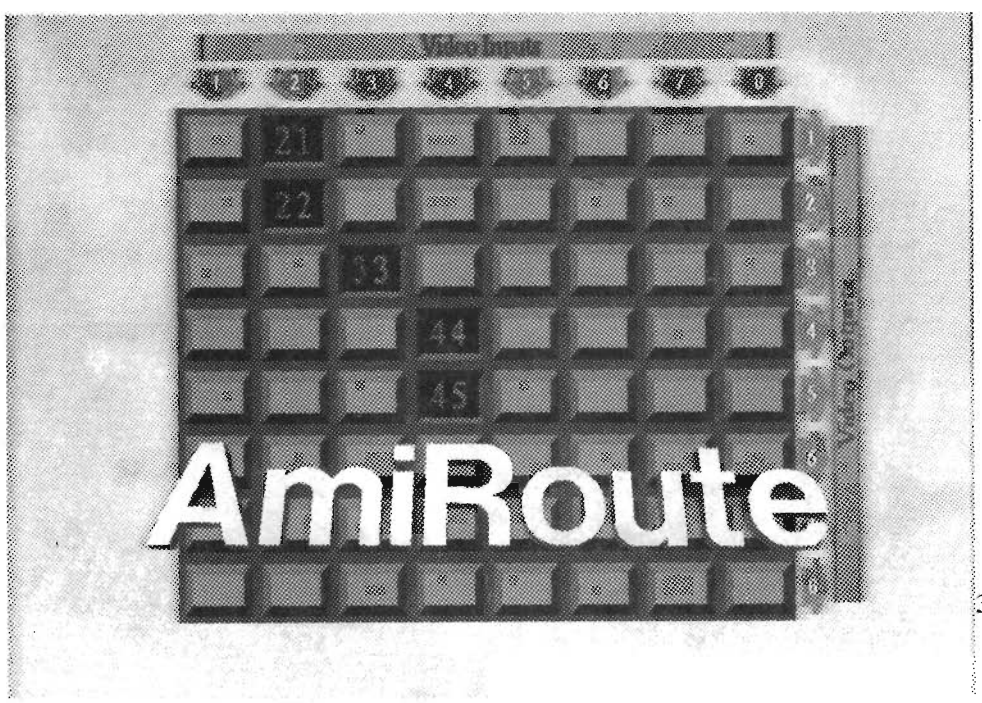
Art Dept. Professional 2.0
ASDG, Inc.
925 Stewart St.
Madison, WI 53713
608-273-6585

VistaPro 2.0
Virtual Reality Laboratories
2341 Gandor Court
San Luis Obispo, CA 93401
805-545-8515

PageStream
Soft Logik Corp.
11131 S. Towne Sq., Ste.F
St. Louis, MO 63123
314-894-8608

Quarterback/Quarterback Tools
New Horizons Software
206 Wild Basin Rd., Ste.109
Austin, TX 78746
512-328-6650

Directory Opus
INOVAtronics, Inc.
8499 Greenville Ave., Ste.209B
Dallas, TX 75231
214-340-4991



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POOLS OF WATER in LightWave 3D

© 1992 by Mark Thompson

When I first received my Toaster over a year ago, I didn't gape in awe at the wild chroma effects, I didn't try to run my name across the screen with the CG, and I didn't even actuate a single Switcher transition. I jumped immediately into LightWave because that, more than anything else, is why I wanted a Toaster. I've been a devout user and technical contributor ever since. LightWave brought new meaning to the words "ease of use" for animators, and made exploring its capabilities a joy.

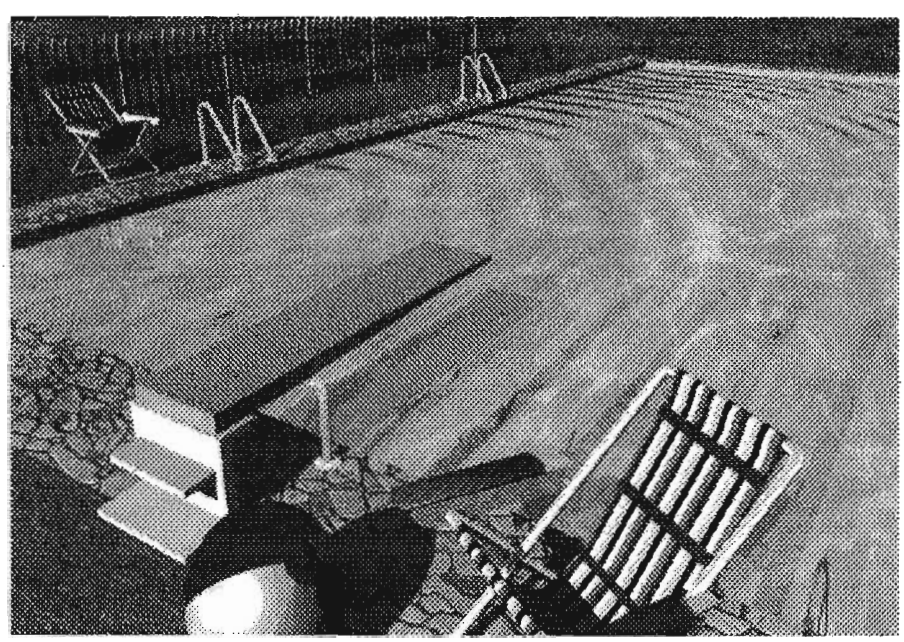
While some 3-D animators will spend endless hours modeling finely detailed objects or creating exquisitely complex animation, I tend to delve into the creation of new surfaces, textures, and effects. Just recently, while hurricane Bob was terrorizing my New England home, I set out to create a convincing simulation of water; more specifically, pool water. Upon seeing the result of this effort, Lee Stranahan gave me a call and urged me to write an article describing the technique, so here goes...

The method I used relies heavily on the use of a good water brushmap combined with other surface attributes. The brushmap image basically depicts the semi-random wave-ring pattern resulting from light reflecting off a rippling water surface. This image could be created in a paint program or digitized from an actual pool (or a close-up photo of a pool). The brushmap should contain no more than a couple of ripples but, more importantly, it **must** be continuous from left to right and top to bottom. In other words, opposite edges must match up with one another. A discussion on how to achieve continuous brushmaps is outside the scope of this article, but perhaps could be addressed in a future issue. If you don't feel up to the task or just plain don't have the time, there is the option of simply purchasing a water brushmap from one of the many emerging vendors of image textures. I highly recommend the one included in Pro Textures, Volume I by Leo Martin - it is quite good.

Once you have your brushmap, it's time to put it to use. First, go into the Surface Color Texture requester and use the image as a y-axis planar brushmap with a Size of about 0.6 meters on a side and a Velocity of something like x=0.015, y=0.004, and z=0.006. I also used the same image as a reflected image with Reflection set at 60%. For lighting, I used 60% Diffuse and set Specular to an eye popping 500%. I should note, however, that I chose that value only because of the way I wanted to cast my lights. If you use the traditional method of bringing out highlights in a surface by facing a light toward the camera and angling it down at the surface, a setting of 100% would be more appropriate.

Next, I set Glossiness to High, Transparency to 60%, Smoothing was enabled, and Opaque Edges were used. The final touch for the surface definition was a rippled bump map with a size of about 1.5 meters on a side. You can pretty much tailor this as you like, but I used 4 wave sources of 50% Amplitude, Wavelength of 0.15 and Wave Speed of 0.005. It is important to make sure that the direction of your bump map wave travel be different from the direction of your Surface Color Velocity. This texture definition can be used as is on a flat plane - that is, to be a pool surface. I went one step further and created a polygon mesh which I subtly deformed for additional wave variation. This could further be morphed to other variations of that deformity to create a wildly rippling pool, but I didn't do that as I felt such motion would be more appropriate for an open sea simulation.

The final result is the image shown here and it's even more impressive when animated. Many people have commented that it is the most realistic simulation of a pool that they have ever seen anywhere. Try it out for yourself—you be the judge.



© 1992 by Lee Stranahan

Picture this : A client calls and has a big graphics job for you. They need the job done right now, and they're willing to pay for it. You invite them down to your studio, and they're a nervous wreck. (Clients can be that way.)

They ask you to bring up a Marble background. No problem, and you bring up the marble surface that comes with Toaster System 2.0. One hitch - the client doesn't like it, and asks you for another one.

"Wellllll...", you start to explain, "I don't have another per se, but if I run down to the hardware store and get a piece of marble, I can bring it back here and then framegrab it and then..."

By this time your client is throwing what we in the video business call "a fit".

For the same reason that desktop publishers keep disks of clip art handy, a complete video graphic artist's studio should have a wide variety of textures. Texture City gives you an instant library of textures and images to choose from.

There are actually three different 24-bit texture packages in Texture City - the Pro-60 set (60 images) and two Pro-15 sets (15 images each). There are no duplicates among the different packages, so if you owned all three sets you'd have 12 different Marbles, 9 varieties of Wood, 11 types of Rock and much more. There are a total of 90 images in 12 separate categories. There are also two Pro-40 sets, in Amiga HAM mode or DCTV format, that are sort of a 'best of' from the Pro-60 set. The Pro-40 sets don't have the color information or resolution of the other sets, however.

All of Texture City's textures are high resolution, 24-bit images, and they look great. With a collection as big as this, it's not suprising that you'll like some images better than others, but the vast majority of textures in this package are real winners.

While high-res 24-bit images look great, they can be very big - over one meg each, in fact. Normally, this would create a number of problems for both storage (you'd need ninety megs or so of free space) and distribution (floppy disks cost money, and you'd need dozens and dozens of them).

Enter JPEG to the rescue. JPEG is an image compression standard that allows files to be compressed as much as eighty times (that's times, not percent, remember), with no apparent loss in image quality.

Texture City uses JPEG to compress its files, and includes an easy utility to decompress any image or group of images. The easy-to-use decompression program also includes a browser that lets you preview 4096 color versions of Texture City's images. (The browser previews all three of Texture City's sets, even if you own just one. This lets you look at other packages before you buy.)

So how can you use Texture City's textures? Here are a few hints, which would also work with any other images that you use.

Under System 2.0, you can automatically put CG framestore page text over whatever image you have in ToasterPaint's buffer. Just load any of Texture City's images into TPaint, create CG and presto - instant professional looking CG pages.

By combining different textures in TPaint, you can also create great looking CG backgrounds. Load an image, hit the 'j' key to move to the spare page, and load another image. You can now use TPaint's RubThru function to combine the images.

In LightWave, the most obvious use for images is surface mapping - 'wrapping' the image around an object to change the surface appearance. For instance, you could wrap CobraSkin around your pet store's logo.

LightWave has many different image mapping possibilities, however. Using that CobraSkin as a bump map or specular map, for instance, can create stunning effects. I've gotten some great looking pictures by using one image map for bump mapping, and another for surface mapping. System 2.0's automatic texture sizing is a big help when doing this, by the way.

Texture City includes a number of 'scenics' - images of clouds, deserts, and other 'stock photo' images. These may seem more appropriate for use in TPaint or CG, but there are a number of uses in LightWave. While the most obvious one is using the Scenic as a backdrop image, you can get stunning effects by using the Scenics as a reflected image. Animating such an image gives you very realistic moving reflections, without the speed slowdown of ray tracing.

Texture City gives you almost instant access to a wide variety of images. They look great, and just having all of them handy has led me to try a number of new ideas. And they keep your clients from throwing a fit.

Texture City
3215 Overland Ave, #6167,
Los Angeles CA 90034.
(310) 836-9224.
Pro-60 - $299.95, Pro-15
(Two Volumes) - $119.95
Pro-40 (DCTV or
Amiga HAM) - $119.95

TOASTER TiTLiNG TECHNIQUES

© 1992 by Lion Kuntz

There comes a moment when the busy videographer needs a title to complete a video project. It's important. It's critical. Your hair is on fire, and only the right title will put it out! You need it right now!

For the genius hacker, long-time computer expert, all I have to say is "Use PageStream, Grabbit, DPaint, Pixel 3D, and LightWave, and bang-bang-bang you're done!" The expert groks these clues and reads between the lines to know all the steps for a professional-looking flying 3-D rendered video title. Not everybody, however, has made it to genius hacker computer expert status yet, and many need a few more clues to get it all. I will not waste paper writing the instructions already in your software owner's manuals, but I will draw the connections between software programs which are not in the manuals.

PageStream is a desktop publishing program. It is designed to produce printed pages, but has a few unique features which can be used by the clever person to make titles. The most important feature of PageStream is its ability to read many "Type-1 Postscript" typefaces, and render them to the screen at maximum resolution with minimal jaggies. Compugraphic-type technology, incorporated in other programs and WorkBench 2.0, pretends to offer similar capability. Since there are very few Compugraphic-format typefaces available on the Amiga, and most of those are useless for video title purposes, the Postscript option opens the door to 20,000 choices of typestyles exclusively in PageStream. Macintosh Postscript typefaces are widely available at prices as low as a dollar each (cost of freeware disks or modem download charges).

PageStream includes utilities to quickly and easily convert Macintosh and PC-Windows Postscript typeface software files for its use. The Berkeley Macintosh User Group offers 25 disks of type-1 typefaces for $4 per disk, and downloading from Compuserve offers several hundred typeface files for about $1 each download. Low cost pre-converted and tested typefaces are available from this author at $38 for 50 PageStream version type-1 typefaces.

Not every type-1 typeface will work with PageStream. Mac typefaces made with FontMonger, and those from Bitstream Corporation cannot be used at this time. PageStream is NOT a full Postscript interpreter, and does not have the ability to interpret every maker's typeface software to the screen, even when it prints them to a postscript printer correctly. Some typefaces are too complex for the current version of PageStream to render without glitches. There are plenty enough typefaces available to satisfy the videographer. Especially when you consider that these typefaces can be altered (squeezed, squashed, twisted, and rotated) in many ways. The nicest thing is making your words, lines, sentences, and paragraphs with full typographic precision, including kerning. You are guaranteed to always have the right size, the right width, the right heighth, to precisely fit your requirement. It is a pleasure to work without compromise or sacrifice, because the typeface you want is always ready in the size you want without any excess jaggies.

Once a screen of text is composed in PageStream, it is then necessary to capture the screen image into a file. Grabbit is a screen grabber utility that is very useful for this purpose. SaveILBM is another such utility, and the cost is free in the Fred Fish library. A screen capture then needs to have the border removed, and other touch-ups. Many paint programs will suffice for this, but Deluxe Paint has the ability to anti-alias as well as resize the image into a variety of resolution modes. At this point, if you have no need to go on to make 3-D titles, you can color and animate your title right here in DPaint. DPaint 4 has an interesting metamorph feature currently all the rage, as well as a host of other features. DPaint's color-cycling, for example, is not available in 24-bit animations, yet is an effect often seen on local TV ads and MTV videos. You could convert the image into other resolutions, such as 24-bit IFF with Art Department and paint it up in 24-bit paint programs such as

Toaster Paint. Using the DVEs of the Video Toaster you can do quick & dirty flying titles using only 2-D artwork. ("Quick & dirty", in this context is purely relative, since your quality is the highest quality possible by your hardware, regardless of any other software used or any other techniques used. It just means, no ray-traced, shaded, third dimension added over 24-bit animated scenery.)

For 3-D titles there are a few more steps. Once the touch-up is completed, a screen or a brush portion of a screen is saved. There are again a variety of choices to take an image from disk and convert it into an object for loading finally into a 3-D rendering program. Pixel 3D version 2.0 is ideal for this operation. It very quickly loads a bit-mapped graphic image and edge-detects each color change into a polygon object. The depth third dimension can be extruded with beveled edges, and it can be saved out into a variety of 3-D program formats.

LightWave 3D is one of a number of competing programs designed to produce 24-bit scenes by composing objects, light sources, backgrounds, and motion paths. BREAD BOX readers are assumed to be familiar with it. There are other programs with various other strategies for producing these same results. Sculpt Animate 4D was the first program to permit alphabet letter objects to be tied to keyboard keys, so you could type your words, sentences, and even short paragraphs. Sculpt 4D required you to have previously made your object-alphabet before you could begin. Imagine 2.0 brought out the ability to import regular Amiga fonts and extrude your typing into complex word and sentence objects, but it requires a very finely wrought font to compete with a Postscript typeface! While LightWave does not have any text-to-object functions, Pixel 3D 2.0 solves that problem (as well as solving many others).

From start to finish, a decent 3-D text animation flyby can be completed in under an hour and recorded on tape ready to ship to the customer. Now go call the hair club to do something about that smoldering bald spot on your head.

PRODUCTS MENTIONED:

PageStream ($299.95)
Soft Logik Corporation
11131 S. Towne Sq., Suite F
St. Louis, MO 63123
(314) 894-8608

ProStream Postscript Type-1 Typefaces ($37.95)
Allied Studios
482 Hayes Street
San Francisco, CA, 94102
(415) 863-1781

Grabbit
Discovery Software International
262 S. 15th St. Suite 400
Philadelphia, PA 19102
(215) 546-1533

Deluxe Paint IV ($149.95)
Electronic Arts
1450 Fashion Island Blvd.
San Mateo, CA 94404
(800) 245-4525

Pixel 3D
Axiom Software
1221 East Center St.
Rochester, MN 55904
(507) 289-8677

LightWave 3-D, Toaster Paint, Video Toaster
NewTek Corporation
215 E. 8th St.
Topeka, KS 66603
(913) 354-1146

Sculpt Animate 4D ($499.95)
Byte by Byte
P.O. Box 4400
Redondo Beach, CA 90278
(213) 542-2226

Art Department Professional ($240.00)
ASDG, INC.
925 Stewart St.
Madison, WI 53713
(608) 273-6585

Imagine 2.0 ($350.00)
Impulse, Inc.
6870 Shingle Creek Pkwy., #112
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OPPORTUNITIES FOR TOASTERPRENEURS™

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There are several new applications in the video market that would not have been cost efficient to pursue before the Video Toaster came along. The Toaster's combined "all-in-one" switcher/effects, digital framestore, character generator, 3-D & paintbox make it ideally suited to many tasks that have not been economically feasible in the past. In this article I will focus on a specific market and application for Toaster-equipped producers: the conversion of single-projector corporate slide shows to videotape.

The Corporate Slide Show

For many years the slide show has been a staple of independent A/V producers, providing lots of profit and practically guaranteed continuous income from regular updates. So much so, in fact, that many corporations found it advantageous to start generating their own slide shows "in-house"; purchasing the appropriate computer software and slide generating hardware and assigning full and/or part-time staff to its operation.

More recently, corporate A/V departments have been investigating the potential of turning these static slide shows into more dynamic, video presentations. This has created new opportunities for the resourceful independent producer, especially those who have the Toaster in their production arsenal.

Whether the company converts the new presentation themselves or contracts it to someone else, the fact remains that merely "transferring" the show to video can produce less than the desired result. Charts and graphs are an inherently static medium do not necessarily lend themselves to a more motion-oriented video format. Also, graphics that were originally intended to be projected in large screen format tend to lose their visual impact when converted to the relatively small format of a television screen. There is also a subliminal expectation of movement and pacing when we watch a television screen, and it is this expectation that can transform what was originally an interesting slide presentation into a tedious bore.

Fortunately, Toaster users have the tools to overcome these production obstacles. By skillful adaptation of these graphics to "multiple" images (splitting portions of the graphics over multiple successive screens) you can bring back some of the visual impact lost in the change from large screen to small. Another option is to re-generate the graphics with your favorite charting or paint package, adding motion with some simple 2-D animation or dissolve transitions which appear to "grow" or "shrink" areas of charts that are used as comparatives. Obviously if these graphics are re-generated on the Amiga, you could use any number of page flipping or anim programs to add the desired motion.

Most slide shows also include photos of people and or products. With the Toaster it is easy to use the built-in frame capture and frame store capabilities to accomplish this task. Once you get your images into the digital framestores you can manipulate transitions much faster, and much cheaper (remember, in business, time is money). If using a Toaster Workstation with another platform such as the Mac or PC, you may have other options at your disposal; such as frame capture boards that allow you to take photos into other software for manipulation before transfering them into the Toaster via file conversion, or directly into one of the Toaster's switcher channels. Since a typical 5-minute single-projector program is budgeted for about $1500, an enterprising Toasterpreneur can snag the video transfer (or video "transformation" as I prefer to label it) for nearly the same amount or even much less. (Multi projector shows are usually tied into complex machine control signals and designed for special presentation environments, such as an auditorium or boardroom, and generally not appropriate for small scale video transformation work.) If providing other services such as copy, voice over, music, or new footage (either still or moving) you can expect to bid higher accordingly. You will usually find that it is easier just to take an existing show over to video for the amount that the client already has in the budget for updating the material, usually between $500-$5000 per job. Some of these projects need to be updated as often as every quarter, a little less often for training related materials, and a little more frequently for product marketing.

How to Find and Sell Your Customers

Marketing departments that have sales reps at conventions with small projector slide shows are now being upstaged by the competition who display and also give away video presentations to their prospects. NewTek is a prime example of this. Their "Revolution" tape has been an extremely effective marketing tool. The tremendous lift that having a produced video can give to a company's image in a competitive atmosphere such as a trade show is hard to put a price on.

The trade show environment is a very lucrative place for you to start gathering leads. Just make plans to attend local shows, conventions, county fairs, Car,Boat, & RV shows, How-to fairs, etc. Then pick up business cards, flyers, brochures and anything else that will help you get more information about the prospect's product or service. While you are at it, take some photos (or videotape) of the show, their booth displays and the competition. Some of what you take pictures of, combined with hand out materials, can be used to create a speculation presentation tape that is customized to a company's specific needs.

Customizing your slide transformation demo to include something relating to their industry will give you a tremendous edge when it comes to bids that are "shopped" around to other contractors. Remember, you are trying to get them to see just how effective a video sales presentation can be, so yours ought to be as good as possible. By the way, it is extremely important to target your decision maker before you send your tape. There are several good marketing books available in your public library that will tell you how to do this effectively, I recommend the Guerilla Marketing series by J. Conrad Levinson. Every entrepreneur can benefit from his techniques in marketing and sales, he also publishes a newsletter with his latest marketing tips and techniques that he discovers as he travels accross the country on speaking engagements.

The main thing to keep in mind, is that you want to present your proposal to someone who can give you specific feedback with regards to costs and deadlines. There will be times when you can't get to the decision maker, because there is more than one person involved, such as a committee of people from several departments in the company. If that is the case, there will usually be one specific individual within the group responsible for corporate communications or a similar title. (Remember the old joke; "A camel is a horse designed by committee". Just make sure you don't end up with the "hump".) Qualify the person you are presenting to as a decision maker. Then you will minimize the risk of having someone who may know little or nothing about your business presenting on your behalf to the person that CAN make a decision.

If you are working with safety, training or orientation shows, usually there is an individual responsible for company "Safety" and or "Training & Orientation". A quick phone call to the main switchboard with a question or two like "Could you please tell me who is responsible for company safety or training and orientation?" or "Who is responsible for Corporate Communications and Public Relations?" will be productive. Unless you are prepared to give a phone sales presentation at that particular moment, it might be best to communicate by letter with some type of outline demonstrating your services, and more importantly HOW those services can be affordably brought to bear on their behalf.

Once you have qualified your prospect and arranged for a preliminary meeting to discuss the project or projects that you are going to bid, there are some basic forms that you should have made up to help you detail the job(s). These forms don't have to be very complicated, usually the simpler the better. Outline a checklist that allows for the number of slides that will be "transformed", whether or not narration tracks are to be used "as is" or updated (if updated, whether copy is provided and attatched). Other things to list on the form are production dates, pre-production meeting dates, logo art manipulation such as reduction or enlargement, and any additional photography or video aquisition required to finish the project(s). Although this form is very helpful in preparing your bid, it is even more important to have the client initial any items that would fall into the category of a "shooting list". A shoot-

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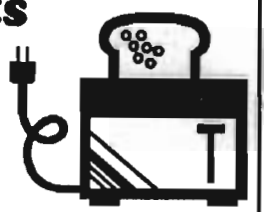

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Dark Horse Productions
292F Wassergass Rd
Hellertown, PA 18055 USA
215-838-2905
Company Purchase Orders OK

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ing list outlines items or activities that need to be aquired on video or photographed. Having the client examine and initial each "shot" can be very helpful in keeping things straight when you get down to the actual aquisition of any additional photos or video that may be required.

Formats & Duplication

Another thing you should be aware of is that many companies have 3/4" video equipment and may expect you to provide the finished presentation on that format. Duplication houses can provide transfers if needed, just be sure they use a TBC (Time Base Corrector) when they do the transfer. You may want to bid the duplication of the project. Duplicators will usually give a discount or commission depending on the size of the order. Labels and the artwork needed to print them may be a factor. Most dupe houses will have those services available at an added cost. Make sure you look before you leap, get the facts from the client regarding numbers of copies needed, and required turn around for the job. Check with your sources and THEN give the client the final cost estimate. The client may want rush service but not be willing to pay extra for it; it's up to you to decide whether or not the extra cost for rush duplication will be shown as an added cost in your estimate. My advice is not to use the words "rush service charges" anywhere in your bid. Your bid price will still be the same, but you will be perceived as a service provider that is eager to please, not eager to charge more. Make your bid simple to understand. If you are bidding the duplication as part of the job, be sure to give the final cost on a per tape basis as well as the total cost of the job as one final figure.

In almost all cases it is appropriate to ask for 1/2 of the estimate as a deposit, with the balance due upon delivery. Whatever terms you decide to use, make certain it's spelled out in your proposal. With a little persistence and skill you will soon be on your way to your first slide show video "Transformation".

Getting Slides onto Video

Let's assume for the moment that you have in fact got the client's approval on your proposal. What's next? The most important aspect of working with slide-to-video transfers is getting the image from slides onto videotape. Believe it or not, your local drug store or photo developing shop can provide excellent transfer services at quite a reasonable cost. The downside is timing. There are times when clients will want and expect "fire drill" type response to updates and changes. Transfers from your local drug store or photo developing shop are sent out to specialty houses, and usually there are no provisions for rush service. Plus there's always the possibility your client's slides can be mishandled, shot backwards, or worse...lost! This could create a definite liability issue. There are essentially two alternatives: 1) using a video camera to capture the images projected onto a screen or wall and, 2) using a device specifically designed to transfer slides to video.

The video camera/projector method can yield good results depending on the quality of your camera and the lighting conditions of the room. This, of course, requires either renting or owning a slide projector. The other method, using a device designed for transfers, generally fall into three categories: lens adapters, table top projector telecines, and direct input devices such as the Tamron Fotovix. Camera lens adapters only work of you have a macro setting on your lens (most now do) and they depend on available room light reflecting through an opaque lenscap as the light source for the slide. Best results are achieved by using a fixed light source such as a desk lamp. These units range in cost from under $30 to upwards of $150. The units I tried showed very little difference in quality or functionality. Generally, the more expensive units had more adaptor rings to allow fitting to different manufacturer's lenses. Results from these devices will suffer from the closeness of the macro lens to the rectangular format of the slide image, giving a fuzzy image area around the edges when the center is in focus.

The desktop telecine converters use a series of mirrors and an opaque image surface and will range in cost from around $50-$100, with primary differences in cost relating, primarily, to the screen size. Resulting images are usually more grainy than the images from the camera lens adaptor, but do not suffer the focusing aberration.

The Tamron Fotovix uses the direct method, which produces, far and away, the best results and comes in a number of different configurations. They range in price from nearly $700 for a used industrial model, to nearly $2000 for the latest slimline prosumer unit. The Fotovix uses an internal CCD camera to transfer the image that is internally projected onto an opaque image surface. Fotovix also has the ability to "zoom in" on a particular slide area image either manually or automatically, depending on the Fotovix model. Other features include fade in, fade out, and negative image (very useful for transferring 35mm color negatives to positive video), as well as the ability to adjust the image brightness, color intensity, and hue. You may find the industrial version of the Fotovix available as a rental item from A/V specialty outlets that cater to Hotel Convention business. I have settled on the Fotovix because it allows me to bring a sense of motion to still images by slow zooms and pans as I transfer the images to video. Once on video, they can be edited to the narration track and the job is finished.

The Toaster's still stores and effects will add dazzle to even the most pedestrian of slide programs. Be careful not to get carried away, sometimes simple dissolves will do the best job of all. A small word about using transition effects that applies to ANY project, more is not always better, don't obscure the message with too much visual movement. Listen to the audio of the presentation with your eyes closed or even in a darkened room, then try to visualize what pacing might work best before doing your final post.

Look Out for "Fuzzy" Fonts

You may find that the selection of fonts used on the original slides may not transfer to video very well; either because they are too small or on background colors that create bleeding over onto the text once on video. Toaster's existing CG fonts can do very well in most cases, but you may need to take the slide image into Toaster Paint for some touching up. Toaster's 2.0 software provides much more flexibility when using CG fonts with the paint program, but if you still are using 1.0, then you will probably want to consider creating some framestore pages with the appropriate text rendered with a drop shadow on a white background. Then, cut the text out without background color and save them

as brushes. Follwing that, load the slide into ToasterPaint, paste background colors over the existing text and paste your new brushes in their place. This can be tedious work but rewarding in the finished product. Hopefully you won't need to do this often (get Toaster System 2.0 and you won't have to do it at all!), since it can be very time consuming.

Another task that can take a great deal of time, but is time well spent, is to keep a separate back up of the still store images you use for the client. I find SyQuest cartridges to be invaluable for this application. They can be stored for extended periods and are relatively reliable if properly cared for. The other option is to store them on videotape, less reliable but infinitely cheaper than disk space. Keeping the shows separated will allow for faster service when updates are ordered.

Getting LightWave Into the Act

If you have single frame animation capability, either with a single frame recorder or by using DCTV (an Amiga peripheral from Digital Creations) conversions of LightWave frames, you can create logo graphics that will win you many accolades with your clients and a growing library of demo material to impress other future prospects. Even if you don't have single frame capability or DCTV, you can still create some stunning 3-D bar charts and technical wire frame style renderings to use as backgrounds. People tend to underestimate LightWave's power to create visually exciting stills. Placing lights in unusual areas, using variable fog, experimenting with surface textures; all these things applied to rather simple geometric shapes such as columns, rectangular boxes, etc., along with an IFF image of the product or logo either mapped on an object or placed in the background, take less time to create than you might expect, especially if you were trying to create those same visuals in a standard 2-D paint program. A technique I have used with some success is to take a two color Dpaint brush (usually a company logo) into Pixel 3-D 2.0 (an Amiga specific product from Axiom Software), render the object with beveled edges, import to LightWave, change surface texture to something resembling gold or silver, then render with black background and lights positioned in such a manner to make the "metal" look convincing. Once rendered as a frame, "Key" it over a marble or other texture that has a dark gradient band across the middle or perspective shading. Then, using Toaster's digital effects, "Fly" the logo into view over the background. The visual effect is very pleasing, a 3-D object, flying in a 2-D perspective. It has most of the impact of a 3-D fly in, but without all the single frame rendering!

That's all for now, next time I hope to bring you a report on how to use the Toaster "On-Location" as a switcher for a live convention event.

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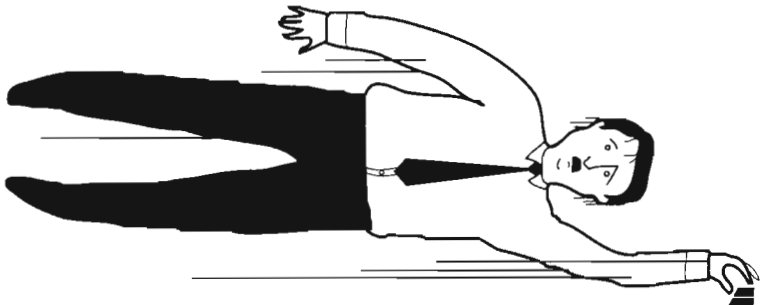

CSA'S 40/4 MAGNUM ACCELERATOR

© 1992 by Tim Doherty

Amiga-based 3-D animation programs have undergone a remarkable evolution since the introduction of the first 3D software a few years ago. Early programs such as DBW Render and Videoscape 1.0 only hinted at the powerful packages which are now available. Indeed, Amiga 3D rendering programs in general, and LightWave in particular, have begun to propel the Amiga from an obscure computer to a respected workstation used by networks and studios. As more animators discover its potential, ever greater demands are placed on the Amiga. The introduction of long awaited 68040 accelerator boards therefore comes at a welcome - and necessary - time.

The 68040 chip is the latest and fastest of Motorola's 68000 family of CPUs (upon which the Amiga is based). Unlike the 68020/30 series, which utilizes a separate math chip to handle floating point calculations, the '040 boasts a built-in floating point math unit. By incorporating the FPU within the '040, integer math operations are handled much faster. Since rendering is very math intensive and often the most time consuming part of a 3-D animation project, '040 users should expect to see noticeable performance increases. However, certain sacrifices had to be made to combine the chips. Transcendentals are no longer a function of the FPU and are handled by the CPU itself. Though transcendental math functions are far less commonly employed than integer calculations, it is possible that software which makes heavy use of transcendentals could actually run slower on an '040 than on an '030.

Several manufacturers now have '040 based boards available, including veteran developer CSA. CSA maintains that compatibility with the Toaster was a priority when designing a new 68040 accelerator for the Amiga 2000. Recently, they furnished a demo unit of their newly released 40/4 Magnum to the BREAD BOX for testing purposes.

My initial inspection of the board, along with a review of the accompanying fact sheet, revealed that this was not just an accelerator. CSA justifiably considers the Magnum to be a Single Board Computer. Its 25 Mhz '040 runs at 20 Million Instructions Per Second. (By comparison, a standard 68000 based 2000 runs at about .8 MIPS, while an '030 based 3000 runs at 5.6 MIPS.) The FPU executes 3.5 million floating point operations per second - theoretically 3.5 times faster than a 68030/68882 based Amiga. The board contains a DMA SCSI hard drive controller, with hard points for mounting an internal 3 1/2" drive. It also has 3 high-speed ports - one parallel, two serial (RS232 and RS422) - all operating within the 20 MIPS environment of the CPU.

One megabyte of 32-bit Static RAM is included on-board. Up to 16 megs of DRAM can be added in the form 4-meg SIMM modules. When 16-meg SIMM modules become available this year, the board will be directly expandable to 64 megs. Additional DRAM storage - up to 128 megs! - is possible via the built-in 32-bit expansion bus. The expansion bus also permits integration with future technologies, such as parallel processing with multiple 68040 CPUs and RISC chips.

With such an impressive design, the question is: how well does it actually perform? I ran two sets of evaluations on the Magnum. For the first series, I selected four benchmark tests from LaMonte Koop's excellent public domain program, AIBB3. The benchmarks consisted of two CPU tests - Dhrystone and Sieve, and two math tests - FMatrix and Savage. Dhrystone attempts to achieve a real-world evaluation of the system. It calculates Dhrystones per second, so the larger the number, the better. Sieve determines the amount of time the system takes to find prime numbers within a range of numbers. FMatrix moves large amounts of data while doing floating point operations. Savage uses double precision floating point values in making nested calls to complex trigonometric functions. The Magnum was compared against a GVP 33mhz '030, a stock 3000, and a stock 2000.

Table 1 shows the results of these tests. In Table 2, the same data is displayed as a performance percentage relative to the stock Amiga 2000. The '040 clearly excelled in the first three tests. In fact, the Magnum performed the familiar Dhrystone calculation 2.3 times quicker than the next fastest board. The only test in which the Magnum did not emerge as a clear winner was the Savage benchmark. Because Sav-

age utilizes transcendentals, the GVP '030 actually out-performed it. However, this benchmark may be slightly misleading, since it does not take advantage of the Magnum's static RAM cache. In real-world use, instructions are copied into the cache to help improve speed. While transcendental functions will probably still be slower than with a fast 68882, they may not exhibit the degree of difference illustrated by the Savage benchmark.

My second series of tests were all conducted by using the '040 during the course of an actual LightWave project. I compared rendering times of various LightWave images using the Magnum on one machine and the GVP 33 Mhz '030 on a second machine. The results are shown in Table 3. Again, the Magnum performed admirably, though the speed increases were not as dramatic as exhibited by the previous benchmarks. Improvements ranged from 152% increase to 52% increase, depending on the complexity of the scene and amount of mapping. It should be noted that bump mapping under LightWave 1.0 utilizes transcendental math functions, and, as such, a scene with a great deal of bump maps may be slower on an '040 than an '030.

I used the Magnum continuously for several days without major difficulties. Though I experienced a few software incompatabilities - for example, with LightWave's Modeler - these were generally problems with WorkBench 2.0 (which the Magnum requires), and should disappear as WB 2.0 updates appear. My biggest concern was that the '040 chip might overheat: it became too hot to touch after only an hour, and so I ran my Amiga without its cover to help the heat dissipate. CSA later informed me that the boards are normally installed with a heat sink, which was missing from the board I tested.

Should you buy a 40/4 Magnum? With a list price of $3995 (including 1 meg of SRAM), the Magnum is not for the casual user. Its features, speed, and price are aimed at professionals. You should compare the cost, performance, and design of the currently available boards before deciding what you need, and what you can afford. But if you are looking for the best, the 40/4 Magnum is clearly worth considering.

TABLE 1: Benchmark Test Results

	Amiga 2000	**Amiga 3000**	**A2000 30/33**	**40/4 Magnum**
Dhrystones NC	1008/sec	4261/sec	7530/sec	17605/sec
Dhrystones XC	---	5506/sec	9191/sec	21737/sec
Sieve NC	34.6 sec	4.74 sec	3.64 sec	2.34 sec
SieveXC	---	4.26 sec	3.26 sec	2.30 sec
FMatrix NC	98.12 sec	19.36 sec	13.2 sec	6.62 sec
FMatrix CPC	---	7.30 sec	5.46 sec	3.22 sec
Savage NC	428.76 sec	88.52 sec	58.54 sec	26.36 sec
Savage CPC	---	2.38 sec	1.82 sec	3.22 sec

TABLE 2: Benchmark Percentage Performances

	Amiga 2000	**Amiga 3000**	**A2000 30/33**	**40/4 Magnum**
Dhrystones NC	100%	458.3%	747.0%	1746.5%
Dhrystones XC	100%	546.23%	911.8%	2156.6%
Sieve NC	100%	729.9%	950.5%1	1478.6%
SieveXC	100%	812.2%	1061.3%	1504.3%
FMatrix NC	100%	506.8%	366.4%	1482.2%
FMatrix CPC	100%	1344.1%	895.3%	3047.2%
Savage NC	100%	484.4%	732.4%	1626.5%
Savage CPC	100%	18015.1%	23558.2%	13315.5%

Notes:
NC = Normal code XC = 020/030 Code CPC = Math Coprocessor Code

TABLE 3: Comparative LightWave rendering times

Performance Scene Description	**68030**	**68040**	**% Increase**
Polygon count = 4830 Map area = small Resolution = 1536x960 Render and Save	5m 5s	2m 1s	152.1%
Polygon count = 4830 Map area = medium Resolution = 1536x960 Render and Save	14m 12s	8m 11s	73.5%
Polygon count = 4830 Map area = large Resolution = 1536x960 Render and Save	31m 24s	18m 23s	70.8%
Polygon count = 4830 Map area = large Resolution = 376x240 Render and Save	1m 35s	1m 2s	53.2%
Polygon count = 4943 Map area = large Resolution = 1536x960 Render and Save	22m 10s	14m 34s	52.2%

SCENERY ANIMATOR

© 1992 by Tim Doherty

Creating realistic, detailed landscapes in LightWave can be difficult and time consuming. Scenery Animator from Natural Graphics removes this burden by generating dazzling 3-D animated terrains. The program saves a 24-bit keyframe animation as a series of IFF24 pictures, which are ideal background sequences for LightWave 3D.

Like its main competitor, VistaPro, Scenery Animator (SA) can render realistic landscapes from fractals or from digital elevation maps (DEMs) of real world geography. It reads Vista DEM files, which means that the large library of Virtual Reality's DEMs are available to SA users.

Scenery Animator's control panels are functional and simple. A preview window on the main screen displays a rough (very rough!) approximation of the current landscape from the camera's perspective. This preview is automatically updated with any change to your camera's location. Gadgets below the preview window enable you to activate any two axes and then move in the selected planes by clicking in a corresponding box. You can also easily reframe your picture simply by dragging a rectangle around an area of your preview. Other buttons on the main screen permit you to fine tune your scene. Many of these adjustments will be familiar to VistaPro users. You can alter the elevation levels for soil, rock, snow, and vegetation; change the angle of the sunlight; set waves and clouds; and modify the base palette.

Clicking on the map button calls up a separate screen with an overhead topographical representation of your landscape. This presents another system for positioning your camera. By using your mouse, you can quickly move the camera to any area of the terrain. A "V" extending from the lens may be turned and resized to interactively adjust the direction and field of view. The map screen also allows you to fill areas of the landscape with water, creating instant lakes. These changes are reflected in your preview when you return to the main screen. To the left of the map is a panel for numeric input, providing a means to precisely fine tune camera movements. The numeric panel is where you can adjust your SA animation to match your camera's motion in LightWave 3D, as I'll mention later on.

Keyframe animation controls reside on both the main and map screens. SA's keyframe system differs somewhat from LightWave's and may take a little getting used to. After setting your camera position (along with any other parameters you wish to adjust, including clouds or altitudes for the terrain attributes), you enter a frame count and then create a keyframe. The frame count appends your animation, adding the selected number of frames from the present keyframe to the next keyframe position you create. Keyframes can be linear or non-linear. It is possible to add zero count keyframes, which influences only the camera's position and not the number of frames in the animation.

Choreographing Scenery Animator to use as a LightWave background sequence is easier than you might expect. All values in SA are in meters. By creating your LightWave 3D animation to scale, you can match keyframes between the two programs. Compose your LightWave animation first, then record the XYZ, HP and frame values of each keyframe. SA has no parameter for adjusting bank, so only H and P should be altered in LightWave. Calculate the difference between these settings for each LightWave keyframe. Using SA's numeric data requesters on the map screen, add or subtract those amounts from the SA camera positions (X=East, Y=Alt, Z=North, H=Dir, P=Pitch). Set the frame counts to correspond to the number of frames between LightWave keyframes. Also, remember to adjust the LightWave and SA light sources so they are coming from the same approximate direction. Note that Scenery Animator uses a four digit suffix when saving an IFF24 animation, while LightWave uses three. When loading the sequence into LightWave, you must include the extra number. For example, if

the SA series is named Land0001 to Land0210, you would load an image sequence into LightWave under the name Land0.

I recently completed a 280 frame architectural flyby using the two programs as such, and the resulting animation was beautiful. The quality of the SA images was striking. However, I made sure not to get too near to the ground in Scenery Animator. Moving very close results in blocky foreground polygons, even with the detail button turned on.

Each animation frame averaged around 7 minutes to render and save to disk using an accelerated Amiga. This compares favorably to VistaPro. The greatest difficulty I faced during the course of generating the animation was breaking it into pieces to be saved on SyQuest cartridges. After the first 75 frames filled a 44 meg cartridge, the system locked up. I formatted another cartridge, then reloaded Scenery Animator, but there was no easy way to begin rendering at frame 76. SA offers no method for specifying a render start point. My only option was to expand the animation into 280 individual keyframes (using the xpand button on the map screen), then manually deleting the first 75 frames and start rendering anew. Of course, this meant that SA saved the images beginning with file number 0001 again, so the pictures on the new cartridge had to be renamed later with the proper number. I repeated this process twice more, when two other cartridges filled up. Hopefully a future update will provide more flexible rendering controls.

Ironically, many users might find that Scenery Animator's greatest strength comes from ignoring the landscapes all together. The program generates fractal clouds that are of near photographic quality and which can be animated independently of the camera. Because clouds do not benefit from turning the detail button on, they render much faster. Point your SA camera skyward, and you can effortlessly prepare a sequence of realistic clouds to compliment your LightWave animation.

Image quality determines the ultimate value of graphics programs. With a list price of $99.95, Scenery Animator is well worth the money. Its landscapes and skies are impressive, and in my opinion, far superior to VistaPro's. (I've heard some nice things about the new VistaPro 2.0, but haven't seen it yet.) LightWave users will not be disappointed.

Tim Doherty is an Amiga animator whose work has appeared on NBC, PBS, and cable TV. Contact him at TKD Animation, PO Box 242, La Mesa, CA, 91944, or 619-589-6540.

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Read What The Experts Said About 1st Prize Toasted Fonts

BREADBOX, Issue #1, July '91: "The last collection we'll be looking at is **Allied Studios' 1st Prize Toasted Fonts.** That name is a mouthful, but this font collection really impressed me.

"There are five sets of Toasted fonts, and each set has any- where from seven to nine typefaces. In addition, most faces come in six size variation (25, 30, 40, 50, 63 and 80 scanlines tall). That's 39 typefaces, hundreds of size variations - and over 13 megs of fonts.

"The fonts look great, and if you're familiar with standard print fonts, you'll be right at home with this collection. One of the strengths of the package is the fact that many of the faces are variations of one font family. Most have regular, bold and black or extra-bold versions. This allows you to create CG pages that follow the first rule of page layout: don't use a bunch of different typefaces - use variations of one face whenever possible."

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AmigaWorld, Sept. 91: "The most extensive collection of monochrome Toaster fonts comes from **ALLIED STUDIOS.** There are five sets of **1st Prize Toasted Fonts** ($69.95 a set), each having from seven to nine typefaces, most of them in six sizes. With 39 typefaces and 228 fonts across the five sets, you have a lot of options. According to the documentation, these were created from high precision outlines, turned into bitmaps, and then converted to Toaster format. They look good, and give you a lot of the standard classic typefaces.

• • • • •

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ALLIED STUDIOS

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TOASTER GOES TO SEA

© 1992 by Bob Kiser

As we anxiously unwrapped the boxes containing our new Video Toaster in May, 1991, little did we know it would become the key apparatus to keeping on the air, the only daily television newscast serving 6,000 sailors for a six month deployment to the Persian Gulf.

USS Abraham Lincoln, the Navy's newest aircraft carrier came well equipped with television production equipment. A sixteen input video production switcher, four time base correctors, two studio cameras, a slide camera, five video recorders including a switchtable, on and off line edit bay, a character generator, even a computerized teleprompter. All the bells and whistles to efficiently produce training videos and television news...except...there was no way to produce graphics or any digital effects. Perhaps a minor point, but really very important to effectively produce a credible newscast and training tapes to the sophisticated MTV/CNN generation viewers.

How could we get the special effects and graphics we needed with our shoestring budget? The last time I had priced digital effects units, prices were $50,000 plus, and nearly the same for television graphics packages. Other PC-based video boards were too stiffly priced by the time you got them to do what you needed.

The answer appeared in a San Francisco Bay Area weekly computer magazine in November, 1990; a review on NewTek's Video Toaster. "Hmmm, what in the world is this? Digital Effects, a paint program, 3D Modeler...Chroma Effects...Freeze Frame...Even a 30 nanosecond character generator. And all on one of those Amiga 'toys'." My many years of video production experience and MS DOS prejudice screamed, "No way, I have to see it to believe it."

A quickly arranged demo convinced "Mr. Skeptical" that the Video Toaster could bring our 70's looking productions into the 90's. Now to convince the boss. Getting an MS DOS based workplace to even consider buying a non-standard Amiga based system wouldn't be easy.

The key was <u>not</u> to propose it as another computer system, but rather as a video accessory that would:

*Modernize productions
*Expand capabilities
*Provide necessary redundancies to the existing system.

The strategy worked! The system was ordered and three weeks prior to deploying to sea, we picked up the boxes and started installing it.

We chose a fairly elaborate system. First, it had to be fast. Live newscasts can't wait for the computer to render a graphic. Second, it had to be able to store a lot of images. The daily changing news stories mandated it. Our primary reason for buying the Toaster was for image manipulation (paint) and storage. The digital effects were handy too.

The system chosen included an Amiga 2000HD with 9MB RAM. A GVP 68030 Accelerator card at 33 MHz souped it up. Data would be saved on a 108 MB hard card or 3 1/2" floppy disks. A 1084S monitor provided the Video Toaster required RGB connection. Two Sony PVM 1380 two channel video monitors rounded out the Program and Preview channel video display.

Setting up the system appeared to be simple enough to this computer and video veteran. After carefully reading both the Amiga and Video Toaster's instructions we were ready to boot. Nothing...recheck cables, recheck software,...nothing. Being an Amiga novice intimidated me somewhat, and after several telephone consultations with our dealer, a trip back was necessary. Admittedly I was somewhat concerned when they tore that brand new Amiga 2000 all the way apart. They swapped anything you can think of trying to get it to work: the Toaster board, the hard card, the accelerator card, even the motherboard. As I remember the final diagnosis, the Amiga's chassis was warped, causing the motherboard to warp and short.

You couldn't ask for better service than from HT Electronics, in Sunnyvale, CA. They worked late to find the problem and upgraded the accelerator board to a faster one when the original had problems. They even threw in some free disk maintenance software when Navy procurement delays missed their special price deadline. I was very satisfied with HT.

TOASTER TIP #1
DANCES WITH MONITORS

As the Video Toaster boots, you'll notice many strange things happening to your video monitors. That's normal. One thing to look for as it boots is for the screen to flash blue twice. If it flashes green, it probably won't complete the boot process and you'll get an error message, "Video Toaster not responding". Check you cables first. If the problem persists, disconnect the cable to video source one from the Video Toaster board. The Toaster is very susceptible to outside video timing errors and sync errors. Since the Toaster gets its external sync from source one, disconnecting source one may alleviate the boot problem. After disconnecting the cables, try again. Once the Toaster boots, you can trace your sync or timing problem and fix it. Often just reconnecting the source will fix the problem.

Our Amiga/Video Toaster works! Now to integrate it with our existing television production facility. Channel one was dedicated to a camera genlocked to house sync. Channel two, camera two. Channels three and four were used for video recorders via Time Base Correctors (TBC). Fortunately our existing TBCs had a spare video output. This eased connecting them to both the Toaster and our existing video switcher. If your TBC doesn't have two outputs you could send it to both switchers by using a BNC "T" connector on the TBC's video out. Beware of timing problems though, if you choose this route.

The preview and program outputs of the Toaster loop through the Sony monitors to a routing switcher. The routing switcher allows us to route the Toaster either directly to a VCR, or into the main production switcher with the push of a couple of buttons.

Routing the Video Toaster to the production switcher complicates timing the system. We chose to live with the timing error rather than retime our entire system to the Video Toaster. The Video Toaster delays the video signal the same as any video switcher does. Effectively we have doubled that delay when the Toaster is routed into the production switcher as one of its video sources. At our facility, "living" with the delay mainly means to not take the same video source sequentially on the two switchers. For example, if camera one is on the air you wouldn't switch to the Video Toaster with camera one selected. Switching to the Toaster with another source selected worked fine for our application. In live switching applications it means you have to plan your shots ahead so you don't get caught having to switch live and see the noticeable delay. Yes, while the Toaster is selected as a production switcher source, your video will be delayed. But you can probably live with that delay as we did.

After we hooked up the video sources and connected the Video Toaster to our system, it was time for the big test. The video was there, but appeared to have no sync. After verifying sync from the camera with a waveform monitor, it was time once again for help.

Our purchase from HT Electronics included two hours of on-site instruction. Arrangements were made for the instructor to help ease our installation woes. He was befuddled too. He connected his demo Amiga and it worked fine with our system. A call to NewTek was in order. A NewTek technician narrowed it down to an adjustment not documented in the manual.

TOASTER TIP #2
ADJUSTING CLOCK SPEED

The Toaster's clock speed can be adjusted to match house sync through an undocumented adjustment. (Newtek advises to be very careful when making this adjustment. If you get it too far out of alignment you may have to send your board back to NewTek for alignment.)

Carefully "pop the hood" on the Amiga. Looking at the Video Toaster board, immediately above the "Video Toaster" label (written sideways) you'll see a small potentiometer (pot). It probably is soldered in place. Carefully ground yourself before touching anything on the board to prevent static discharge. Note and mark where the screw is adjusted. I usually think in terms of the clock, (Example: The pot's slot is at the 3 o'clock position). With the Video Toaster booted and connected to house sync, use a non-metallic "tweeker" (screwdriver) to carefully turn the screw. Keep track of how many turns you make. It shouldn't take much until the picture straightens up. A waveform monitor is best to precisely set sync, but you can likely "eyeball" the picture to satisfactory results. [Editor's Note: NewTek does not recommend this adjustment to end users without the appropriate signal testing equipment]

After adjusting the clock speed we finally had an operating Video Toaster. Next, we had to learn how to use it. Our primary need was for news and sports graphics for our daily TV news. Basically, we needed to insert graphics into a box over the news anchor's shoulder. Then use a digital effect to transition from that graphic to the next. Initially we used the Toaster only as a still store system. The still store image was inserted in a rectangular box through our main production switcher. The talent camera was positioned screen right with a space left for the Toaster's graphic. This combined with a digital "slide" effect gave a very professional appearance. An image would be alongside the news anchor during a news story. When that story ended, a new image, pertinent to the new story would slide over and replace the old within the box.

Not having a professional artist on staff did not hamper getting professional appearing graphics. Our facility subscribes to a news slide service. These photographic slides, combined with freeze frame images saved from video taped stories provide a wealth of images. Manipulating them with the Video Toaster switcher and ToasterPaint is easy with very professional results.

TOASTER TIP #3
SAVING AN IMAGE

There are six basic steps to saving an image. Select the image in the Preview bus. Freeze the image by clicking the Toaster's "Freeze" button. The Toaster will grab eight frames of video. If you're freezing a moving video image there will likely be motion in the image. To remove motion, press the Toaster Preference Slice Button (the button with the question mark).

Click on the motion removal icon labeled "Freeze". Motion removal takes about 45 seconds with our accelerated system. It will take longer with a slower microprocessor. Once the motion is removed, click on the "OK" button from the Toaster Preferences Window. This will return you to the Switcher Window. Now your image should appear in one of the

DV's. Save the image on an unused page. Our facility dedicates page 555 for temporary storage of images being modified. To save the image, click on the "Save Frame" slice. Type in the number you've assigned using the keypad. Use the mouse to click on the comment box, then type in a name for the image. Up to 12 characters may be used. Once the image is named, save it by pressing "Enter" on the number keypad or by double clicking on the "Save" button.

Now that the image is saved, you'll probably want to modify it by using ToasterPaint.

TOASTER TIP #4
RESIZING AN IMAGE

From the video switcher, select the "ToasterPaint" slice. Once into ToasterPaint, recall the image desired. Drag the Mouse to the bottom left of the screen, pressing the "Right Mouse" button. A screen will pop up at the bottom. Point the mouse at "Load Frame" and click the left mouse button. A directory will appear, defaulting to DHO (hard drive). If another storage device is desired, just click on its icon and a new directory will appear. Recalling the image can be done two ways. If you know the image's number, save time by just punching in the number on the numeric keypad and hit enter. Your still stored image will begin to appear. If you don't remember the number, click the mouse on the slide located on the left of the screen. Now you can browse through all the images and click on the one desired. Once the image is loaded, you'll see only about one fourth of the picture at a time on the screen.

As mentioned earlier, one of our facility's main desires was to have graphics in a box next to the news anchorperson. This required us to resize nearly every image processed. First a template was made with a "window frame" that would appear around all the images. Placement of this window was achieved by trial and error. A quick way to position the window correctly is by videotaping a local newscast with a similar effect next to the talent. Use this as a guide to draw a box, then paint out the rest of the image around and inside the box. I found the best color for background was none at all or black. The black background allowed us to use the luminance keyer later. Dedicate a page that's easy to remember and save the template. We use page 000.

Now back to modifying an image to fit inside the box. At this point you have the image you want to modify on the screen. This is achieved in ToasterPaint by using a custom brush. First move the brush size to the minimum. Click on the "Rectangle" and "Fill" buttons. Select the "Scissors" button. Now position the pointer where you want a corner of the rectangle to appear. I usually work from the top left corner for consistency. Drag the mouse over the area you want saved and click the "Left" mouse button twice. Now you have grabbed the image. Save the image as a custom brush by clicking on the "Brush" menu. Select the "Swap" sub menu and double click on "Copy This Brush". If you don't copy the brush, you won't be able to enter the next mode called "TxMap". Slide the mouse to the right until the "Mode" menu pops up. Select "TxMap" from the Mode menu. Again select the "Rectangle" tool and activate the "Fill" button. Load the template saved earlier. The image you made the custom brush from will be overwritten. Don't worry though, your brush is still there. Once the template is loaded, carefully position the pointer to the top-left of the rectangle. Click the left mouse button and hold it. Drag the rectangle out and down to the opposite corner and release the mouse button. Your image should be resized inside the template. All that remains is to name and save the image and you're finished.

In Summary:

(1) Freeze the image
(2) Remove any motion
(3) Save the image
(4) Call up the image within ToasterPaint
(5) Paint / Modify the image
(6) Resize the image
(7) Save the image

While this process may seem long and drawn out initially, with practice it will soon become automatic. I can usually resize an image in less than five minutes. The longest delay is saving and recalling the image. I hope in the future NewTek will make provisions to change the default values in ToasterPaint. For someone like me who does repetitive work, constantly resizing the brush, pushing "Fill" and "Rectangle" gets monotonous. Changing the defaults would certainly speed the process up.

I found the Paint program's built-in fonts pretty much useless for professional quality labeling. The Amiga fonts provided were simply too small and suffered from a bad case of the "jaggies". The jagged edges just didn't look good. You can enter the character generator program, type and save an image, then combine it with another image using the same process described above. Though time consuming, it is worth it for the quality.

TOASTER TIP #5
IMAGE LABELING WITH CHARACTER GENERATOR

If you have several images to modify and label, first resize or modify and save the images. Then exit ToasterPaint and enter the Character Generator program. Create as many labels as you can on one page, then save that page as a still store from the video switcher. Then within ToasterPaint, you can cut and paste the labels from that page and place them in the other images. This saves time by not having to enter and exit ToasterPaint and the CG programs several times. (With Toaster System 2.0 this has been completely changed for the better!)

I found the Toaster's Character Generator very versatile with its many fonts, though a bit cumbersome to use with its many function keys. It's great to use in post production projects but for live news situations it's too slow to render, in my opinion, and cannot be used simultaneously with other effects. For example, putting a name key over the news anchor with a graphic over his shoulder. We used our facility's dedicated character generator downstream of the Video Toaster for live productions. Don't get the wrong idea here though. The Toaster's character generator could be used in live productions. I just found it a bit slow for a fast paced news environment.

Our accelerated Video Toaster performed as advertised. The only thing different I would have done is bought more storage initially. Our 108 MB hard drive will store a little over a hundred images. We filled it in about two weeks with constantly changing news graphics. After that it was a daily juggle to transfer images to 3

1/2" floppy disks. Though time consuming, this process works. Just be prepared to use a lot of disks. Each still store image takes up nearly an entire 760K disk.

If your work is going to be graphics intensive, initially buy the largest hard drive you can afford. Removable media is also recommended as the most economical way for additional storage. Access speed is important too for fast paced use. Our hard drive, rated at 13ms, recalls a still store image in 3-5 seconds. While that seems fast, it can seem a lifetime while a news anchor is reading a story with the wrong image next to him. Again it depends on your use. If you won't use the Toaster in live productions, primarily post production, speed isn't as important. Buy the best you can afford initially, because once your Video Toaster is installed, you'll likely find many uses that you didn't plan for. Our Video Toaster was bought primarily for its still store and paint capabilities.

Two weeks into a six month deployment, in the middle of the Pacifc Ocean, our main production switcher died. With little hope of getting it repaired within a couple of months, a decision had to be made. Do we let the 6,000 men aboard USS Abraham Lincoln live without news or other programs produced locally or give the Video Toaster a shot. The Toaster won out. There were some growing pains as the technical director got used to pushing a computer keyboard rather than the buttons and fader bars on our larger switcher. We cut source inputs to the bare minimum for the newscast, two cameras and two VCRs. Once over the learning curve, the product looked very good. We were able to be even more creative with digital effects and full frame graphics. The only negative thing I found as a director was having to take two steps instead of one for some transitions. For example, if a graphic is keyed with the luminance keyer next to the newscaster and a video tape is needed next, you can't simply take the VTR. The luminance key will be over the video tape too. You must first take the key away, then transition to the video tape. With practice, even this got down to a half a second or so transition.

Thanks to the Video Toaster, sailors and Marines at sea got the information they deserved, despite a major system failure. It was not a degraded product, either. "Newslinc" took first place honors in the Navy-wide media competition for ship produced newscasts. The judges commented favorably on our successful implementation of graphics and digital effects, neither of which could have been done without the Video Toaster.

Bob Kiser has been an award winning broadcast and industrial video producer/ director for the past 15 years. Questions can be addressed to 108 B Cortez Circle, Novato, CA 94949.

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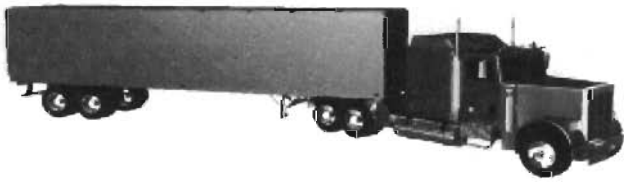

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Look for "Taming the Wave: Exploring NewTek's LightWave 3D," an exciting 2-hour video on achieving professional results with LightWave, due April 1992.

Read "Lighten Up," the monthly LightWave 3D column by Mach Universe's David Hopkins, in AVid Magazine!

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TOAST ON THE ROAD

© 1992 by Joe Clasen

I recently received a call from my friend John who was providing video support for a ski show called "Winterfest '91" at the Anaheim Convention Center. Two days before the show was to start he asked me to be, what he jokingly called "The Toastmaster" for his production. I knew my Toaster System was up to it, so I readily accepted. On show day I loaded up my Amiga 2500, along with three monitors, I also packed my laser disk player, VCR, and a box of every cable, connector and adapter imaginable. Prepared to do some cooking, my entire production studio fit easily into the back of my mini-truck.

Upon arriving, I unloaded my equipment onto a cart and wheeled it past a seemingly endless display of ski boots, clothes and bunnies. After finding the main stage, I set up next to John, who was running the video switching for two cameras. The main stage was 40 feet in front of us. To the right of the main stage was the show for ski jumps and trampolines; to the left of the main stage was the Pioneer Video Cube wall. The wall was 16 (4x4) 30 inch monitors, all neatly stacked and glowing magnificently. At the other end of the building, a Sony Megatron Video Monitor truck displayed our signal in front of a huge skateboard ramp. You could easily see the Pioneer or Sony wall from the opposite side of the hall, over a football field away. All the video walls needed needed was a little source material.

The way we used the Toaster at this show was to send a live camera feed through me and back to John who could switch my signal in and out of the program feed to the video walls. This allowed me to provide Character Generator over live or canned sources as well as giving me time to set up a digital effect. Just as we had compared bars on his scope and "tweaked" the signal, the first show began.

As he talked to his cameramen on his headsets, I ran some titles announcing the show, which happened to be a ski jump and trampoline exhibition. After the show was underway, I started experimenting with the three types of real-time trailing effects with the Toaster. Having found the right settings, John switched the live video feed of skiers sliding down the forty foot ramp and doing double flips towards me, and I proceeded to give them radical looking trails on the video walls. The trampoline exhibition became a human spirograph of color as I trailed and froze each move, releasing the trailing images for the next set of maneuvers. At the end of the show I grabbed a framestore of all the performers to use for advertisements for later performances that day. I played a laser disk of skiing I had brought and started to talk to John about what we needed to do next.

John set up one of his cameras into a makeshift copy stand and we went to work getting some framestores of logos for advertising. I lifted his logo from his business card as well as the rest of the promoters. I also grabbed framestores of a Coors logo off a poster, and of the "Coors Girl" as she walked by. We stored her for later use. Just then, a local radio station started doing a live remote directly below the Pioneer Wall. I ran over and grabbed one of their bumper stickers and made a framestore of it. I then opened ToasterPaint and began to white out everything but their logo. In minutes we were able to key their logo on the Pioneer Video Wall. After a couple of minutes of scrolling graphics announcing their give-a-ways, prizes, and location, I was back in ToasterPaint, cleaning up the rest of the framestores for logo overlays.

Elvira, Mistress of the Dark, was the hostess for the night's entertainment. I made a couple framestores of her from the video laser disk she provided. From time to time we made announcements and showed her picture to announce the Karaoke Contest she was hosting that night. Karaoke, if you don't know, is a playback system for laser disks, whereby one can sing along with pre-recorded songs that have the lead vocal removed. The words appear on TelePrompTers for the performers. In this case, the words appeared on the Pioneer

Video Wall, overlaid on top of the camera feed. Using ChromaFX, I made some instant MTV-type effects for the performers.

While Elvira was on stage, I exited the Toaster and booted up Deluxe Paint III. Since I had some animations of dancing skeletons left over from Halloween, the pass-through genlock allowed me to place the little guys dancing all over her. With the show taking place on Friday the 13th, it seemed only natural (or supernatural) to let a ghost in the machine. Going back into the Toaster, I listed the contestants, winners, and prizes at the end of the show and called it a day.

The next day was easier because we had most of the logos in the Toaster. The scheduled talent that night was Manly Moondog and the Three Kool Kats, featuring Woody Harrelson from the television show "Cheers". His agent showed up earlier with a couple of photographs. I worked in Toasterpaint after shooting the Framestores to overlay his logo on top of his picture. His agent worked with me in the character generator to come up with a snazzy title that scrolled across the bottom of the screen that we played over his picture announcing his upcoming concert. At various intervals would overlay the current ski movie with a graphic logo of a sponsor, or put up the ramestore of Woody announcing his concert.

Another local radio station showed up late in the afternoon to do a promotion. We made a Framestore from a refrigerator magnet of their logo they were giving away and overlaid it on the Pioneer Video Wall. Around dinner time, the band showed up and did a sound check that was loud enough to drive the observers out to shop for ski bargains. While I had a few moments, I went into Lightwave 3D and rendered a one-third screen size "WOODY" from my favorite font. I then texture-mapped a wood texture on the letters, producing a great title screen. To start the show, Woody comes out and sings by himself to the audience. The wooden "WOODY" looked great layered on his close-up camera shot as he sang. When the band came out, we went to a traditional two-camera shoot of the band. John would talk to his cameramen over the headset and set up the shots, and then tell us when he was switching. With the Toaster in the loop, I picked out tumbles and flips and made the switches a little more interesting. Sometimes I would open ChromaFX and add a little color. During one extended moody piece I played a laser disk of animated colored lights and keyed the background into a swirling band of color. In the end the band walked offstage while their frozen image remained on the video wall.

The NewTek Toaster loaded up into my truck in half an hour and I was on my way home. I knew the huge production truck full of video-gear, which normally provides these kinds of services, could not have supported the show as easily as I did by being on directly the floor of the hall. With the widespread use of multimedia productions and projection systems, I foresee an obvious need for "Toastmasters" who can work quickly under pressure. I think one of the overlooked abilities of the Toaster is its portability. Now that you have stuffed the contents of an entire post-production studio in a box, what do you do with it? You take it with you!

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THE WORLD OF LIGHTWAVE 3D

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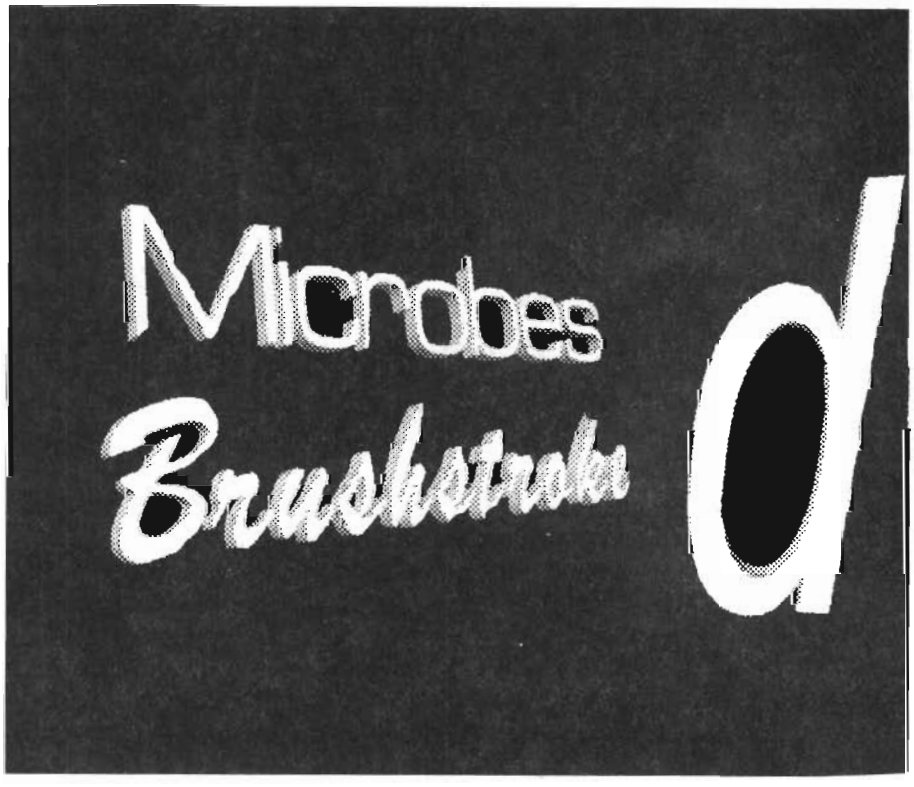
The last few months have seen scores of new software goodies in support of LightWave 3D. It seems the most popular are 3D fonts, which have been popping up faster than I can render them! First, there's the Broadcast Fonts 3D series from Unili Graphics. These disks (three of them, each sold seperately) each offer three beautiful typestyles for use in your 3D animations or stills. Disk one contains the thin, high-tech Microbes, the Helvetica inspired Helsinki, and the thick, block font known as Future Shock. On disk two you'll find Paladium (a nice serif), Clarity (another nice serif), and Park Place (a nice calligraphy style). Finally, disk three offers the self-explanatory Brushstroke, Copper (a fat serif), and Casual, which has an ink marker feel to it. You can also buy all three sets in one package for $99.95.

The really interesting thing about the BF3D fonts is that they actively employ smooth shading on the sides of letters. This is achieved by using duplicate points to "break up" the sides and faces of each letter. The manual which is included with the disks informs the user of the dangers in using Merge Points on these characters. These sets are extremely professional and produce some incredible results. I've already used a variety of them in my animations and highly recommend them. A sample of these fonts is shown in Figure 1. Notice the smooth curves on letter edges. Very well done stuff, Unili!

The last item I'll mention in the font category is the Pro/Duction Series from Mach Universe. That's right, my company makes them. In the sake of fairness I'll not make claims to their quality, but I've got to mention them. This is a series of 3D fonts, objects, and textures which are designed exclusively for use in industrial/broadcast video. Currently available is the Future Font, a high-tech beveled style. The set contains uppers, lowers, and punctuation for only $19.95.

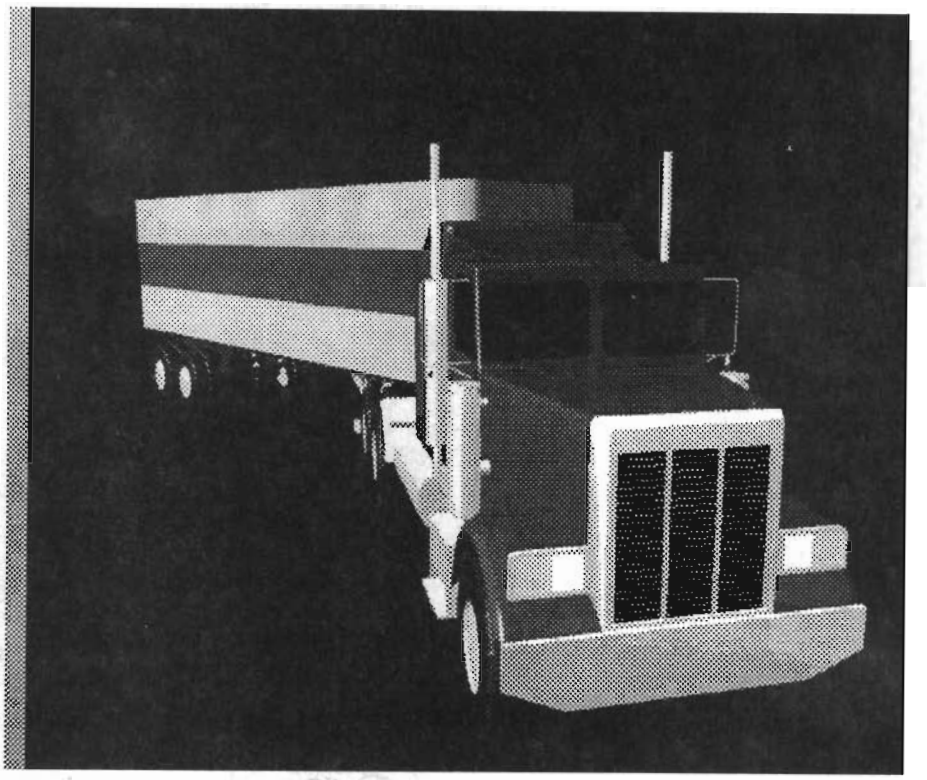
On to normal 3D objects! There don't seem to be many regular 3D objects (meaning non-fonts) coming out as I had hoped. I have, however, found an excellent source of 3D objects via the GEnie service. For those of you that don't know about GEnie, it is a national (international?) computer bulletin board service that has



areas for everything from on-line games, news services, airline reservation systems and stock market quotes to conversations on just about anything you can imagine. It also offers a HUGE library of Amiga files ranging from game demos to 3D objects. That's right, 3D objects! Most of them are in Imagine format, but can be converted using programs such as Axiom Software's Pixel 3D 2.0. At about $6/hour (at 2400 baud), GEnie is an excellent deal. There are even very active Toaster message areas where you can get just about all of your questions answered, and just recently, Lee Stranahan (of BREAD BOX, Upper Crust, AVID and now NewTek, fame) held a Real Time Conference that was quite enlightening for newer users. Plus, the Amiga Starship System Operators are some of the nicest folks you'll ever talk to!

A Bulletin Board system that is centered around 3D is Studio Amiga. This is an excellent (but VERY busy) board in the Texas area where you'll find most of the Amiga 3D luminaries such as Allen Hastings, Lee Stranahan, James Hebert, and many others. You can reach Studio Amiga at (817) 467-3658. Also, I'm running a special section of Fat Aggie's BBS (for those of you that don't know, this board is named after the Fat Agnus chip inside your Amiga) in Santa Barbara, California, devoted to LightWave 3D. This is primarily an Imagine BBS, expanding to LightWave, so let's help support it! You'll find plenty of useable 3D objects, hints and tips, and much more on this active little board. It can be reached at (805) 964-5725. Check out the BreadBox BBS, the home of the Upper Crust Toaster Users Group from Lee Stranahan, for still more hot LightWave goodies! You can reach that one at (818) 883-9778.

Not to blow my own horn again (yes it is) (no it isn't), but Mach Universe has announced the release of a FreightLiner Semi Cab and Trailer as part of its' continuing Pro/Duction Series. Both objects come on one disk, and have been meticulously crafted to provide the best possible renderings. Curves are smooth where they should be and so on, plus you can map images on the sides of the trailer to provide a customized truck for any purpose. Parts such as the cab's mirrors, all the tires, the trailer itself, and the mud flaps are designed to move independently using hierarchies. This object retails for $49.95. A sample rendering of the truck is shown in Figure 2.



All right, all right, enough about that...Time for the "neat trick department." This one is especially for all of you folks with Electronic Arts' DeluxePaint IV, the exceptional paint package which is a MUST OWN for all LightWave users. If you don't have DeluxePaint IV....well...GO OUT AND GET IT RIGHT NOW!!! We'll be using the WorldMap image (included with DPaint IV) to create a stunningly "high-end" looking globe, but if you don't have that image, you'll have to fake it (figure 3 shows what the WorldMap looks like).

Start out by loading up DPaintIV. You should know how to do this, right? OK, now load in the WorldMap picture from the Deluxe Paint IV Art Disk One Pictures directory. When it is loaded you'll see a nicely colored map of the world's continents. What we want to do is use this as a texture map wrap around a sphere to give the illusion of a "proper" Earth. We'll need to use a couple of different versions of this map, however, so let's start there.

First thing, go to the Stencil options in the Effects menu and choose Make. Click on the blue paintbox third from the top on the left hand side of the Stencil requestor and then click Invert. We want to turn all of the water (plus the black drop shadows) color zero (the first black square), so click on the black square in the upper right corner to enabling it to be painted over. We do this because there are actually two "blacks" in the palette. The black in the first position is a transparent color when used in wrapping, but the other black is not. You should now have only the water's blue and the rightmost black NOT marked. Click Make to accept it. Now, choose the filled box tool, left click on the upper left black from the color palette and press the F10 key to hide the panels. Starting in the VERY upper left corner of the screen, define a full-screen black box by dragging to the VERY bottom right corner using the left mouse button. When you release the button all of the blue water area is filled with black, leaving only the continents.

Remember that we can use black as a transparent color when mapping. When you are done with that, choose Free from the Stencil options menu to release the stencil. Save this image in your Toaster/3D/Images drawer with the name "WorldMap.Bump". Press the F10 key to bring the panels back. You have just created a bump map for use in LightWave.

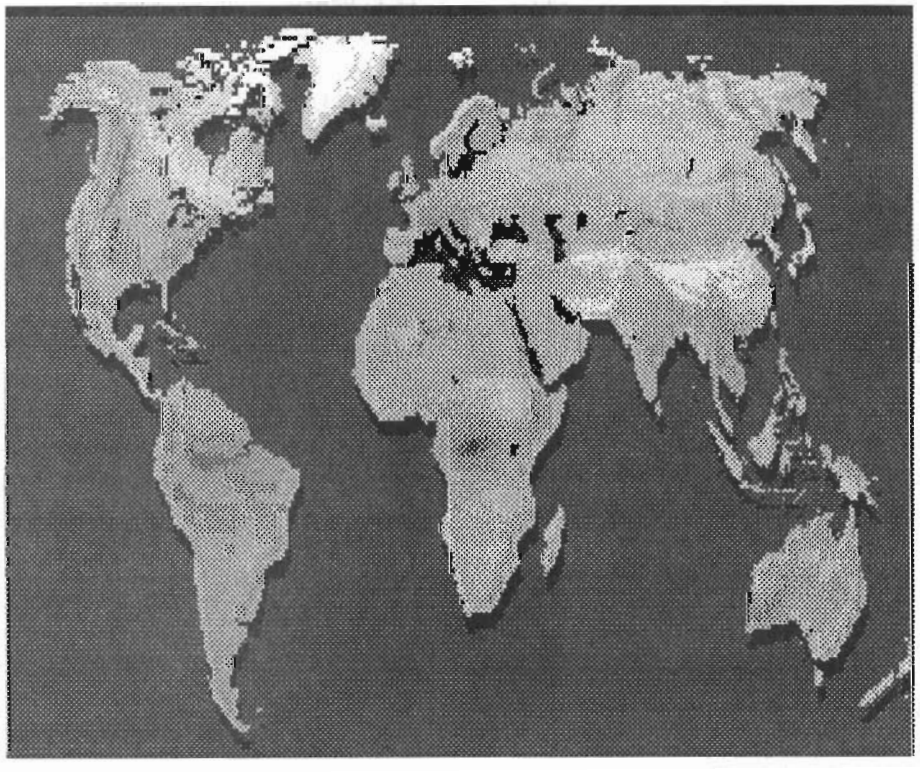
Now we want to make a separate map that will simply have the continent shapes

in white on black water. Go back to the Make Stencil option and click Clear. This will eliminate all of the old settings. Left click on any black area on your picture to "mark" that color as locked, or just click on color zero (the upper left black, remember?). Choose Make to accept the settings the way they are. This time, choose the bright white in the lower right corner of your palette, press F10 and drag out the full screen box the same way as before. Notice that we are only painting over the continent colors. When you have that finished, turn off the Stencil again, then press the "P" key on your keyboard to bring up the color palette requestor. Click on the black square on the far left, then the button marked "Ex", and then the white on the far right side. This exchanges the black and white so that the continents are black on white water. We did that because LightWave determines transparency by how bright the image is. The brighter the color, the more transparent. Save the image as "WorldMap.Trans." You have just designed a transparency map for LightWave!

Since we have our maps all set up, we can quit DPaint and start up the Toaster. Go into the LightWave Modeler and click Ball from the Objects options. Click Numeric so that you can just enter the important information and be on your way. You'll want to set both the rings and segments to 30. Note that this will be a lot of polygons by the time we get done with it, but it will be very smooth, so if you don't have much memory you can set these numbers lower and make do with a less smooth planet. Also, we don't want to change the size, so leave it alone. Click OK and then Make to generate this sphere.

Next, click on Polygon Mode, go to the Polygon menu item, and choose Copy, Flip, and then Paste. Choose Merge from the Options menu and the duplicated points will be merged. This now gives us a sphere with both an inside and an outside. Click Edit and type in "Atmosphere", and click Create. This gives us a surface name to assign to the ball. Go back to the Polygon menu and choose "Surface." Set this to be the name Atmosphere which you just created. Finally, save the object as "Atmosphere". If you haven't guessed, the item you just created will be the atmosphere around our planet...

Go to Modeler's second layer and choose Ball from the Objects menu again. Using the Numeric entry method once more, set the Radii for all three axis to .98 and then click on OK. Choosing Make will generate your planet which will sit snugly inside the atmosphere. Return to Options, click Edit, and create the name Earth. Assign it to the planet by using the Polygon/Surfaces option and then save the object as "Earth".



Now, you may be asking, why did we just make two spheres to become one planet? Couldn't we just map the image on a single one? Well, have you ever seen ABC's 20/20 television show? It is just one example of a trend that is becoming increasingly popular when displaying globes, and that's because the continents aren't actually ON the planet. They float just off of the surface as the globe rotates. This effect is REALLY nice when done properly, and it was, in fact, the 20/20 animation that inspired me to try this. The results will be well worth the extra effort and polygons!

So, now we get to the fun part....Exit Modeler and load the two objects you just created into LightWave. Remember that you can gain some more memory by Unloading the Modeler if you are running low. Now go into the Images area and load both the "WorldMap.Bump" and "WorldMap.Trans" pictures you created in DPaint.

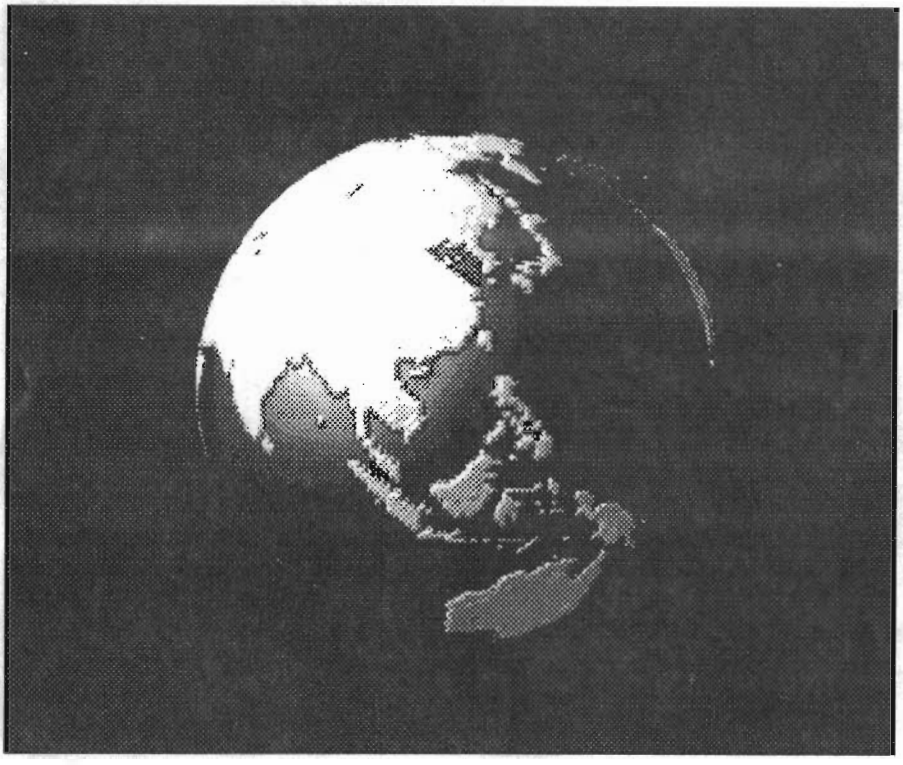
Enter the Surfaces area and go to the Atmosphere surface. Click Surface Color, then Texture to enter the mapping area. Set the Texture Type to Spherical Image Map and Texture Image to WorldMap.Bump. Choose Use Texture to accept these settings.

Go ahead and render a frame now so that you can see the changes as we are making them. If you are running an accelerated machine, go ahead and do all the renders in AntiAlias. My 28Mhz '030 Toaster took 3 minutes and 3 seconds to render the frame.

Notice that the water is black. We put black in place of the blue water, remember? Don't worry, however, as we'll get rid of that black in the next step. You'll also notice that the continents look like they are on "tiles" or facets. We'll change that by turning on smoothing. Press ESC to return to LightWave.

Go to the Atmosphere surface area again, but this time choose Transparency and then Texture. Set the Texture Type to Spherical Image Map and the Texture Image to WorldMap.Trans. Choose Use Texture, turn the button marked "Smoothing" on and render it again (4 minutes 35 seconds on my machine in AntiAlias mode).

Looking better, but the water is all screwed up. Well, that's easy to fix! Press



ESC and go to the Earth Surface Color. Make it a dark blue (around 188 looks good in my opinion) and click OK. Turn Smoothing on and render one more time (4 minutes 40 seconds).

It's still missing something.....bumps! Press ESC and enter the Atmosphere surface area. Click Bump Map, set the Texture Type to Spherical Image Map and the Texture Image to WorldMap.Bump. Click Use Texture and go for yet another render...8 minutes 25 seconds.

Now we have some life! This is where I'll end the tutorial portion, but you should start experimenting with variations on this method. For example, for a really sophisticated look, try these settings:

Atmosphere set to color 200-200-200 with no texture map (you need to enter the Surface Color Texture area and click Free Texture to release it).

Diffusion set to 25, Specularity to 85, and Glossiness to Low on both the Atmosphere and Earth surfaces.

Make sure you render the above in AntiAlias (I know, it may take a LONG time on an unaccelerated machine, but it's worth it!)...you'll be amazed and inspired.

If you choose to animate the globe you just made, simply use Set Parent in the Layout screen to attach the Atmosphere object to the Earth object. From there, you can move the Earth object anywhere you like and the atmosphere will remain on it. For adventures in hierarchical motion, make the Atmosphere object rotate while the Earth object simply moves.

Hopefully, this tutorial will give you a few inspirations about using multiple image maps. In the same vein, I'd like to take a moment to mention a wonderful demo tape I received recently. Created by Duncan Shader, of Tustin, CA, this tape offers some VERY nice effects using everyday objects. A certain animation shows excellent uses of morph in transforming items from "household" to futuristic. It's great to see that people are actually using ALL of the features LightWave has to offer, and morphing is one of the most complex.

Send in your demo tapes, everybody! I'll be mentioning the best, and you may even find yourself the center of attention here in BREAD BOX Send any correspondence to:

Mach Universe Productions
ATTN: David Hopkins
2421 East Ball Road, #B100
Anaheim, CA 92806

or, you can reach me at my GEnie address: D.Hopkins9

That's about it for this month. We'll be playing with LightWave 2.0 next month, so, until then, may your upgrade path be rapid!

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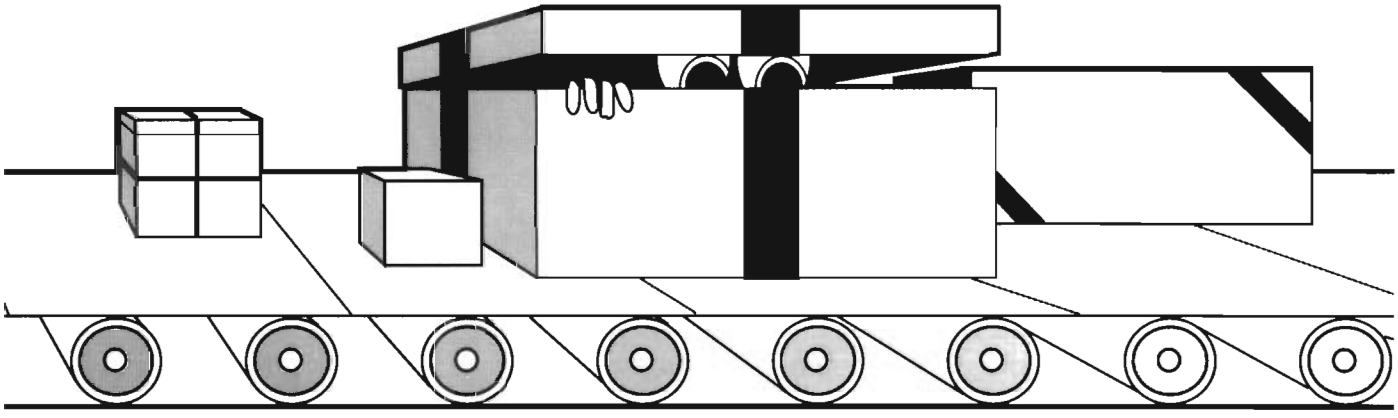

NEW PRODUCTS

New Image Processing Tools from ASDG

On Jaunary 17, 1992, ASDG Inc. announced the availability of 2.1.0, a new release of Art Department Professional. 2.1.0, which was originally slated to be only a maintenance release, has several additional features built into it.

ASDG has added a new program called FRED, a visually oriented frame editor. FRED helps users organize their pictures into lists called sequences. Individual frames in a sequence are represented on-screen with accurately rendered icons. ADPro can be told to process each frame in a sequence providing an easy method of batch processing. FRED also provides an extensible ability to call special purpose drivers which can cause ADPro to generate animation effects automatically. You can even preview animations within FRED before committing them to a single frame recorder. FRED requires Kickstart 2.04 or later.

Also new in version 2.1.0 are the roll and broadcast limit operators. The roll operator makes creating video-style transitions such as pushes, slides and reveals much faster. The broadcast limit operator identifies and corrects colors which can cause playback artifacts based upon specific NTSC, PAL or user definable standards. Both operators enhance ADPro's usefulness in the video studio.

ADPro's PREFPRINTER saver, which prints pictures with 24 bit-plane color or 8 bit-plane gray scale resolution on any printer supported by Preferences, has been augmented with 8 new dithering methods. These new methods greatly enhance the quality of prints made on low resolution black and white devices, such as common laser and dot matrix printers.

ADPro 2.1.0, including a manual supplement, will be sent free of charge to all registered release 2 owners. Owners of ADPro version 1 can upgrade to version 2.1.0 for $75 (if in the United States, or for $90 elsewhere). Owners of The Art Department (TAD) can upgrade to ADPro 2.1.0 for $130 (if in the United States, or for $145 elsewhere). Upgrade costs include shipping. Allow four to six weeks for delivery.

For more information about this or other ASDG programs, contact Gina Cerniglia at ASDG Incorporated, 925 Stewart Street, Madison, WI, 53713, or by calling 608/273-6585.

More Power from GVP

Great Valley Products announced January 2, 1992 the release of their 50Mhz G-Force Combo Board, which utilizes their existing 50Mhz accelerator. The new board has two facets previously not addressed: it is now capable of falling back to the 68000 mode, and it comes with a SCSI controller, something other 50Mhz boards are lacking.

The G-Force 030 is built with 32-bit wide DRAM, and comes standard with 4MB of 60ns RAM; it is expandable to 16MB. In addition to icon-based software which allows the user to switch to the 68000 mode, there is an optional kit available which will allow a hard drive to be mounted directly onto the board.

The G-Force 030 is currently shipping, and the suggested manufacturer's list price is $1699.

For more information, contact GVP at 215/337-8770, fax: 215/337-9922.

JEK releases Pro Fills 2.0

JEK Graphics recently announced the release of Pro Fills Version 2.0. Pro Fills Version 2.0 is now a powerful stand-alone application for creating full color, full overscan, video background screens for use with any Amiga IFF application. Choose from a selection of 123 Patterns and Textures in 60 different palettes. The Video Toaster, DCTV, and DeluxePaint IV are just three of the many Amiga applications Pro Fills is compatible with.

The Screen Generator will multi-task with the Video Toaster and Pro Fills screens

may be used for a variety of Toaster-related functions. ToasterPaint will import a Pro Fills screen for a complete backgrounds or use Pro Fills to add a pattern or texture to individual graphic elements. LightWave 3-D can utilize Pro Fills for both texture-mapping and bump-mapping of model surfaces. Pro Fills will add realism otherwise impossible with LightWave alone.

Pro Fills is Fast! The Screen Generator will render any Pro Fills screen in any Amiga resolution in less then two seconds. The Screen Generator is a solid multitasking program with an intuitive user interface. Developed under AmigaDOS 2.0, Screen Generator has been tested on virtually every Amiga configuration

The Pro Fills manual includes professional tips, illustrated tutorials, and printed examples of each pattern and texture. Pro Fills is a must for anyone creating professional graphics on the Amiga. Pro Fills Version 2.0 retails for $49.95 and is available from most Amiga dealers. For direct orders or additional information contact: JEK Graphics, 12103 S. Brookhurst Street, Suite E-125, Garden Grove, CA 92642-3065 Telephone# (714) 530-7603

Computer Animation Services From Anti Gravity Workshop

The Anti Gravity Workshop creates high quality computer animation for a wide range of client needs. Their work is rendered in 24-bit high resolution and can be output either to film or tape. Their Amiga and Video Toaster-equipped studio provides the freedom to create with maximum power and flexibility. They've uniquely adapted several pieces of equipment to better serve the needs of Amiga-based video producers. One example of this is a specially modified version of the Amiga called "the Cube". The Cube is an Amiga 3000, a Video Toaster, a one-gigabyte hard drive, a two gigabyte DAT backup and beefier power supply enclosed in a granite-textured, cube-shaped case. The Cube is networked to several '030 and '040 based computers providing the rendering power to handle a wide variety of animation projects.

For more information about the production and creative services of the Anti Gravity Workshop write to: 456 Lincoln Blvd., Santa Monica, CA 90402 Or call: (310) 393-9747

CRUMBS...

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Now that 2.0 has shipped, here's a couple of hints on the new stuff...

When grabbing frames for use in graphics, but not sure which motion removal method (1-field or 2-field) to use? The 1-field freeze removes any motion perfectly, but may cause some image degradation on parts of the image that are already still. The 2-field freeze may cause some aliasing as it tries to remove motion, but the still parts look better. Each one has its advantages - so why not use both? Grab a frame and DON'T remove motion. Go into ToasterPaint and use the new GRAB function (it's a pull down menu on the far right hand side of the screen) - grab TWO fields from DV-1. When finished, render to the screen. Now, check which buffer you've rendered to. A quick way to do this is to check the menu selection right under the GRAB that says Frame > DV1 or Frame >DV2 - whichever one is checked is the current render buffer.

Now press the 'j' key to jump to ToasterPaint's spare page. Do a 1-field grab from the other buffer (the one not currently selected.) Select the other frame (the one you just grabbed from) as the current frame and then render to the screen. Now switch between Frame > DV1 and Frame > DV2 to see the differences between the two frames. You can now use TPaint's Rubthru mode to select the best parts from each frame. TPaint's grab features can save your image quality as well.

Whenever possible, grab an image instead of saving. When you save an image (particularly as a Framestore) you lose a little bit of quality - a lot of saving and resaving will cause noticable image loss. This happens often when working on complex graphics. Grabbing an image from TPaint lets you avoid this.

Make sure to check out Toaster System 2.0's demo book - it has a number of useful CG hints, as well some nice looking color gradients. To create an emobossed look on live video, use Chroma FX to create negative video, and then do a fade transition halfwat between the normal video and the Chroma-effected video.

Well, that'll do it for this month. See you next issue.

from the

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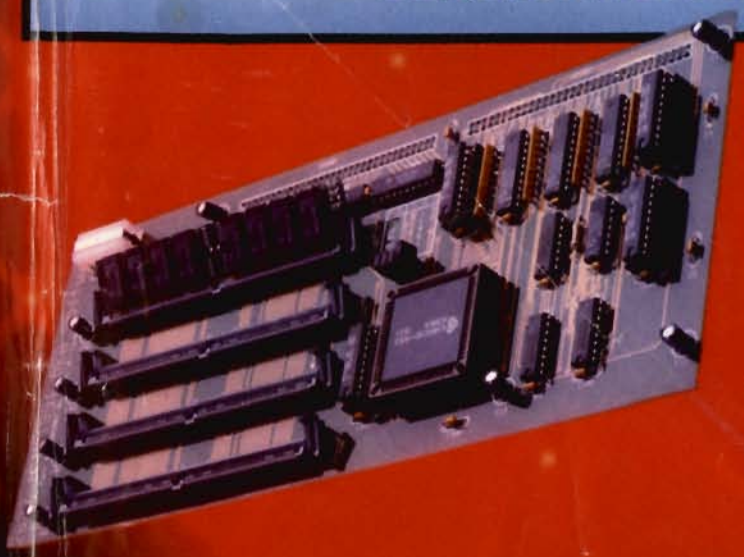

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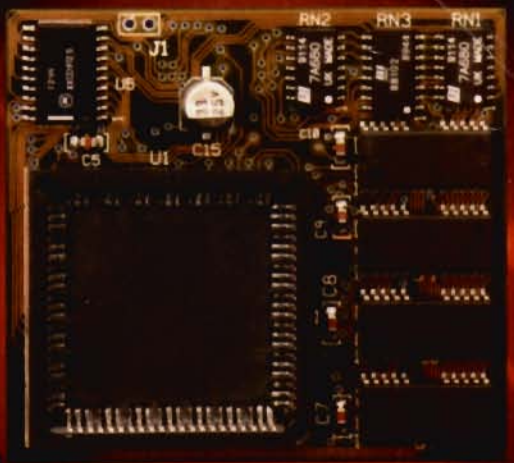

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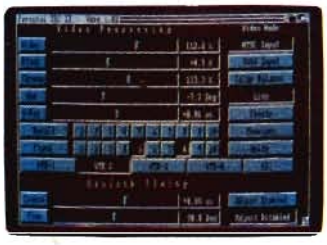

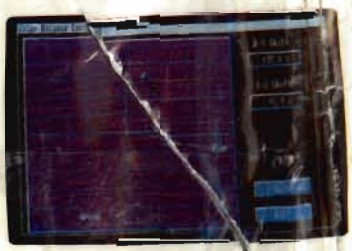

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